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THE EPILEPSIES ASSOCIATED WITH ENDOCRINE DISORDERS*

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The relationship of various neurological and psychiatric disturbances to endocrine disorders has been recognized for some time. The frequent occurrence of the more severe nervous reactions, such as the epilepsies, headache, insomnia, somnolence, vertigo, tinnitus, behavior disorders, and personality traits in incretory imbalance is of sufficient importance to demand the attention of the entire medical profession. The epilepsies are of particular interest, inasmuch as in the past it has been customary to treat them with sedatives and offer the victim little hope.

During the last decade numerous case reports have been made of these convulsive states associated with definite endocrinopathies, which have responded to replacement therapy. Engelbach reported 28 cases in endocrinisms, for which no other cause could be found, all of which responded favorably to organotherapy. They were classified as follows: 13 pituitary; 4 thyroid; 4 gonad; 7 parathyroid. Others have reported them associated with adrenal dysfunction, and Harris first called our attention to the many cases associated with hyperinsulinism. Gerard and Kuntz call attention to the association of tetany and epilepsy, and Parbon and Constantinesco report the favorable effect of parathormone in its treatment. E. Geert Jorgensen reports two cases of post operative tetany and epilepsy; Brodski four cases of genuine epilepsy relieved by transplants of goat parathyroids. He states, however, that hypoparathyroidism must not be considered the only cause of the complex symptoms of epilepsy, but that the parathyroids furnish the principal cause of the endocrine upset and that the symptoms are the result of a generalized disturbance of the incretory system. I present the following case reports as rather classical examples of convulsive states associated with endocrine disorders:

*Read before the Section on Medicine, 42nd Annual meeting, Tulsa.

PARATHYROID

Case 1: W. M., a female, aged 18 months. She had spasms since birth, and had always been extremely nervous. The mother stated that the child was a difficult feeder and that she had never been able to find a suitable diet for her. The parents had been advised by several physicians that her symptoms were due to birth injury. Examination revealed a rather spastic and definitely underweight infant. There were cataracts of both eyes. Chvostek and Trousseau signs were both present. A severe crying spell during examination provoked a typical epileptic seizure. A diagnosis of infantile tetany was made. Calcium lactate and viosterol were prescribed with complete relief of spasms, ability to take food, and disappearance of the cataracts.

Case 2: E. M., a male, aged 16 years, complained of peculiar quivering and fainting spells, nervousness, and inability to gain weight. He stated that he fainted upon the least exertion and that his muscles and bones ached following this. He ate an average amount of food, but could not gain weight. It was very difficult for him to adjust himself, either at home or at school. Examination revealed a tall, thin youth, 70½ inches in height, weighing 116 pounds (optimum weight 150 pounds), who was obviously very nervous. Positive findings were scaphoid scapulae, acrocyanosis of extremities, myodemia, very large central incisors, and all teeth in malposition and malocclusion. The serum calcium was 8.6 mgms. The serum phosphorus was 4.2 mgms. Diagnosis was hypoparathyroidism. He was given calcium by mouth, parathormone 10 units three times weekly, and a high caloric diet. Symptoms entirely disappeared, and weight increased 20 pounds in two months.

Case 3: J. M., a female, aged 7 years, who complained of epileptic seizures, extreme emotionalism, and nervousness, which had not been relieved by phenobarbital. She was nauseated most of the time, and the mother stated that she had never been able to find an agreeable diet for her. Examination revealed

a definitely underweight child. All deep reflexes were increased, and Chvostek and Trousseau signs were positive. X-ray revealed a persistent thymus. Radiation of thymus and calcium gluconate by mouth resulted in complete cessation of attacks.

Case 4: S. E., a boy, aged 16 years, complained of epilepsy, headaches, asthma, general and sexual underdevelopment. In his play with other children he found it necessary to rest frequently because undue exertion precipitated the seizures. Examination revealed a poorly developed and extremely undernourished boy, 56¼ inches in height (optimum 65 inches), who weighed 63½ pounds (optimum 90 pounds). He had the somatic and sexual development of a 10-year-old child. The joints were flail-like and the muscles hypotonic. The serum calcium was 9.2 and the serum phosphorus 8.2 and 7.6. Because of the high serum phosphorus, he was given a low phosphorous diet, plus viosterol, minims 3, three times daily, and calcium gluconate, grains 30, twice daily. Anterior-pituitary growth hormone was also prescribed. He has gained 22 pounds in weight, has grown three-quarters of an inch in height, and has had complete relief of all symptoms during the past three months.

Calcium metabolism is regulated by the parathyroids. One of the prominent actions of calcium is upon the excitability of the nervous and muscular systems. This is evidenced in parathyroid tetany by marked nerve and muscular hyperirritability due to a lowered calcium balance. Its inhibitory effect on the conduction of nerve impulses is exhibited in hyperparathyroidism where the serum calcium is increased. In infantile tetany the rapid excretion of calcium may be reduced by vitamin D. In hypoparathyroid tetany the serum calcium may be increased by administration of the active principle of the gland, which is available as parathormone or parodin. In both the parathyroid and infantile types calcium by mouth is indicated.

PANCREAS

The role of the pancreas and disturbed sugar metabolism as a caustive factor in epilepsy has been brilliantly demonstrated by Seale Harris and others. They have conclusively proved the definite association of convulsive states with hyperinsulinism and other hypoglycemic conditions.

Case 1: M. C., a white female, aged 9 years, who during the past two years had had attacks simulating genuine epilepsy, consisting of clonic and tonic muscle spasms, frothing at the mouth, and unconsciousness. The attacks occurred two to six times monthly, were always nocturnal, and, most usually, between 5:00 and 6:00 in the morning. One and a half grains of luminal at bedtime during the past six months had had no effect upon them. Examination revealed nothing remarkable, except a suggestive diadokokinesia. The serum calcium was 10.2 mgms. per cent, and serum phosphorous 4.3 mgms. per cent. The fasting blood sugar was 0.052 per cent. X-rays of the skull were negative. Because of the low blood sugar and time of occurrence of the attacks, increased carbohydrate feedings were prescribed. She was given one stick of pure sugar candy at 10:00 a. m., 3:00 p. m., and at bedtime. There has been no recurrence of the seizures during the past eleven months.

Case 2: C. B., a white male, aged 14 years, with history of typical grand mal seizures occurring weekly, which had not responded to sedation. Convulsions always occurred near 5:00 o'clock in the morning. The general and neuro-endocrine examinations revealed nothing remarkable. The fasting blood sugar was 72.5 mgms. The glucose tolerance test showed an atypical curve: 0.0725; 0.0754; 0.0921; 0.0727. Six ounces of highly sweetened orange juice were ordered for him at 4:00 o'clock each morning. He has been entirely free of attacks during the past fourteen months, except on two occasions, one which occurred while suffering from a severely infected tooth, causing extreme pain until extracted. Another occurred following an attack of influenza with high fever, plus a rather severe emotional upset.

Case 3: G. S., a white male, aged 21 years. Genuine epileptic seizures at the age of 14 years, which have continued since then at the rate of three to six a month, and always nocturnal in type. Examination revealed a thin, undernourished, asthenic type individual, somewhat maladjusted and depressed. Blood pressure was 88/68. Fasting blood sugar was 62.4 mgms. per 100 cc. of blood. Sugar tolerance test readings were: 0.065; 0.090; 0.052 per cent. Frequent feedings of moderately high carbohydrate content were instituted, and, because of his low blood pressure and other vagotonic signs, suprarenal substance was added. He has had only two seizures during the past three years, precipitated by very excessive exertion.

The majority of cases of functional hypoglycemia may be treated by frequent feedings or by a diet high in fat, which has a depressing effect upon the pancreas, or with pituitrin, which is an antagonist of insulin. Hyperinsulinism due to neoplasms of the pancreas is best treated by operative procedures.

ADRENALS

Myasthenic, narcoleptic, and epileptic episodes are frequent sequellae of adrenal insufficiency. In Addison's disease fatigue, insomnia, mental aberrations, nervous irritability, and convulsive seizures commonly occur. Their immediate relief following injections of adrenal cortex extracts is striking. In other hypoadrenic conditions adrenalin, the hormone of the medulla, may be equally efficacious.

Case 1: F. M., an obese female, aged 35 years, began having epileptic seizures at the age of 18 years. The severe attacks, which occurred two to three times a month, were interspersed with almost daily occurrences of "blank spells," during which the patient would suddenly become motionless for two to five seconds. Other signs and symptoms were those of a vagotonia. Suprarenal replacement therapy has given her entire relief during the past 18 months.

Case 2: G. K., a young man, aged 26 years, complained of narcoleptic attacks, which he had been told were epileptic. The seizures would occur while waiting on a customer, during conversation, and resulted in his having had several auto accidents. They oc-

curred two to four times daily. He had been treated as an epileptic for four years with no relief, and had become very depressed and morose. Suprarenal replacement therapy has given complete relief for thirteen months.

Case 3: C. T. D., a white man, aged 59 years, who appeared to be much older, complained of mild convulsive states followed by clouding of consciousness, which would last for several hours. During the past eight years he had noticed extreme fatigue, which interfered with his duties as a minister, and inability to gain weight. His weight was 105 pounds, which he said was the most he had weighed in ten years. He had frequent indigestion, and his diet consisted mostly of cereals, eggs, and starches; no meats nor green vegetables. Examination revealed a definitely undernourished individual with some apparent bronzing of the skin. The blood pressure was 90/70. Examination was otherwise negative. He was given adrenal cortex, 1 cc. three times weekly, and advised to add meats and vegetables to his diet. Reexamination six weeks later revealed the blood pressure to be 120/78. He had gained 17 pounds in weight, and was entirely free of all symptoms. A letter received from him six months later advised that he had been "getting along so well that he could hardly believe it." There had been no recurrence of symptoms. The blood pressure continued 124/75, and he felt that he was in perfect health.

PITUITARY

Sir Victor Horsley, in 1886, demonstrated that ablation of the hypophysis produced an irritability of the cerebral cortex, so marked that even the slightest stimulation would result in typical epileptic seizures. This has been further confirmed by other investigators. Cushing described 13 cases of epilepsy associated with symptoms definitely pituitary, which responded to replacement therapy. Lowenstein observed that 30 per cent of epileptics showed evidence of pituitary symptoms, such as acromegalic characteristics, dystrophia adiposogenitalis, somatic and sexual under- or over-development, and x-ray evidence of sella turcica changes. In all cases he noted lessening of convulsions following administration of pituitary substance. Timme has reported equal success with the same treatment. Pituitrin is known to lessen the convulsions provoked by insulin.

The relationship between the pituitary and epilepsy was established when an anatomico-pathological examination in cases of epilepsy revealed changes in the pituitary. A typical case is the one reported by Kryloff. A careful post-mortem examination revealed intensive degeneration of cells in the tuber cinereum with an atrophy of the entire hypophysis. The posterior lobe was sclerotic, and the cells of the anterior lobe showed hyalinization. Similar changes have been observed by Claude and Schmingeld in 50 per cent of their cases. In the hypophysectomized experimental animals of Hoursny and his coworkers convulsions often ensued, which disappeared after pituitary implants. These findings are in accord with the ideas of Cushing and of Clark—that pituitary hypofunction is one of the fundamental pathologic conditions of epilepsy. This idea has also been confirmed by the findings of Altenburger and Stern, who found a lessened amount of pituitrin in the cerebrospinal fluid of epileptics.

During pregnancy there is an augmentation of the secretory activity of the anterior lobe of the pituitary and an increased vasoconstrictor response to extracts of the posterior lobe. During this period there is often a complete absence of the epileptic seizure. This reaction can be, and has been, attributed to the moderating influence of the pituitary gland on the centers in the diencephalon. The fact that there is a decrease in the convulsive attacks following oophorectomy can be explained on a similar basis since there is an increased activity of the pituitary with a rise in the content of its secretions in the cerebrospinal fluid. The same condition presents itself after thyroidectomy or capsulectomy.

The rather frequent findings of physiological and morbid changes in the pituitary, thyroid, adrenals, and other incretory glands in cases of epilepsy gives us an indication of the relationship of these glands to this condition. It is an established fact that there is a very definite functional relationship, and one is readily able to suppose that convulsive crises may be lessened by a normal physiological balance and aggravated by a condition which produces an abnormal or toxic pituitary secretion. This may readily explain the numerous cases of thyroid origin and their relief by the administration of thyroid or by thyroidectomy; accompanying changes in the adrenals and relief by suprarenal substance and by denervation; and the convulsive action of insulin, which is partially counteracted by the injection of pituitrin.

Case 1: M. R., aged 28 years, complained of epileptic seizures three or four times weekly. The onset was at the age of 12 years, at which time her weight began to increase very perceptibly. She matured at the age of 16 years, and the attacks became less frequent, but more severe. At the age of 20 years the menses became lessened in amount and duration, and the frequency of the attacks increased. Her weight continued to increase, and was of girdle type. Her basal metabolic rate was minus 16. She was given antuitrin, 1 ampoule daily for six weeks and then

reduced to 1 cc. three times weekly, and thyroid in increasing doses to tolerance, which was established at 5 grains daily. Her menses returned to nearly normal, and the attacks were reduced to a mere fluttering of the eyelids and momentary haziness, which occurred only once every two or three months.

Case 2: S. D., a boy, aged 12 years, complained of convulsive states since the age of 8 years, occurring two to five times monthly. He had taken luminal, grains 1½ daily, over a four months period without effect. Examination revealed a typical dystrophia adiposogenital syndrome. He was given anterior and posterior pituitary substitution treatment, and has been entirely relieved of the attacks for the past three years.

Case 3: C. F., a female, aged 24 years, complained of classical epileptic seizures since the onset of her menses at the age of 15 years. The attacks had always been pre-menstrual. The menses was of regular 28-day cycle, but the flow was very scant, and only of one or two days duration. Examination revealed a rather classical pituitary type individual, and relief has been obtained the past nine months during the administration of antuitrin.

Case 4: M. L., a female, aged 22 years, complained of rather severe convulsive states occurring several times daily during her menstrual period, which was rather excessive, and lasted five to seven days. She matured at the age of 12 years, and the convulsions began to occur two years later. She was married at the age of 18 years, and conceived during the next few months. During the entire term of her first pregnancy she was completely free of any seizures. Shortly after the termination of this pregnancy the seizures returned. A year later she again became pregnant, and the attacks ceased. She aborted at the end of four months, and her symptoms recurred. She was given an anterior-pituitary-like hormone (Antuitrin-S) in 1 cc. doses every other day during the second half of her menstrual cycle, and has been entirely free of the symptoms during the past eleven months.

I have attempted in this brief paper to demonstrate the importance of endocrine dyscrasias as an etiological factor in the causation of epilepsy, or preferably "the epilepsies" because they may result from a multiplicity of conditions. These convulsive states, according to White, "may be the outward manifestations of many other conditions such as functional neuroses and psychoneuroses (hysteria, compulsion neurosis), the more frank psychoses (dementia praecox), toxemic states (uremia, alcohol), many organic diseases (paresis, cerebral syphilis, abscess, softening and tumors), and the grosser defects of development (idiocy) and trauma."

That many so-called epileptics are amenable to treatment is becoming more to be appreciated by the profession. It is my contention that every sufferer from this symptom complex is entitled to, and should have, a thorough diagnostic survey, including a very careful neuro-psychiatric and endocrine examination. Many of them become morose, depressed, and hypochrondriacal because they have been wrongly impressed, by members of their family and by their physician, of the hopelessness of their affliction. We can do much for these people by convincing them that they are not doomed, urging them to act and do as their fellow-men, and attempting to lead them away from the egocentric fixation which they have acquired. Many can be relieved by endocrine therapy.

DISCUSSION—*By Dr. Harry Wilkins*, Oklahoma City:

This paper by Dr. Turner brings to our attention the old subject of the epilepsies. He has referred to the particular phase of epilepsy in which endocrine therapy is indicated as "convulsive states." I feel that this is a much better term than "epilepsy" since he is describing a disease in which convulsions are symptoms of endocrine disorder. The omission of the term epilepsy is an advantage in removing from the patient's mind the dreaded blight ordinarily cast on one by having their disease described as epilepsy.

This report of excellent results obtained by Dr. Turner in the use of various gland substances opens an avenue to greater knowledge concerning convulsive states. It also shows great advance during the past few years in the knowledge as to physiology of the endocrine system.

In recent years the studies by Dr. Penfield and his co-workers of the nerve supply of cerebral vessels has brought to light the fact that nerve fibers do exist in the vessel wall and control the caliber of the vessels somewhat as the vascoconstrictors elsewhere in the body. If the vascular supply of the cortex is under control of the nerve mechanism such as the above-mentioned experiment tends to indicate, we then have a media thru which endocrine substances may have a direct influence on the blood supply to the brain and particularly the motor cortical centers. I still hold to the theory that convulsions result from cortical irritation regardless of the nature of the irritation and the symptoms produced are similar. In other words, a Jacksonian seizure resulting from impaired blood supply may simulate in every way the Jacksonian attack produced at operation by direct stimulation of the motor cortex.

Coming from the surgical side, I cannot help but emphasize Dr. Turner's clos-

ing remarks in which he called attention to the necessity for a careful neurological and general physical examination as well as special tests so that obvious organic conditions can be ruled out before resorting to this type of therapy. In every case reported the organic changes in the brain were ruled out and definite signs and symptoms were present to give a clue as to the glandular deficiency. An attempt to treat convulsive states without first ruling out the presence of some obvious organic lesion will result not only in failure to relieve the condition but allow irreparable changes to occur before the proper treatment can be instituted. This point was particularly evident in the case I saw recently. A young man of tall stature with slightly acromegalic features came giving a history of generalized convulsive seizures over a period of seven years. The neurological signs were apparently inconsequental. An x-ray of the skull showed a tremendous calcified mass in the left temperal lobe which undoubtedly has been present for the past several years. Glandular treatment would obviously have failed in the treatment of this case in which surgical removal offers the only relief.

In closing, I feel that we should commend Dr. Turner for presenting this subject to us in this meeting. It is a timely one and presented in a most interesting fashion.

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REPORT OF SERIES WITH ALUM PRECIPITATED TOXOID*

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Ever since 1895, when diphtheria antitoxin was discovered, medical science has been attempting to improve the methods of immunizing children against this dreaded disease. With the advent of alum precipitated toxoid, we thought perhaps the peak of achievements had been reached. This product was and is supposed, from the reports of different investigators, to produce an immunity, with an even greater antigenic titer than that produced by the unprecipitated toxoid, with only one injection of from one-half to one cc. The advantage of this product is obvious with its saving of time, effort and expense.

Alum precipitated toxoid was first advocated by Glenny and Barr. This toxoid is prepared by adding aluminum potassium sulphate to toxoid that has been prepared in the usual manner—by detoxification with formaldehyde—until no further precipitate occurs. This precipitate is washed twice with normal saline solution and then the resulting precipitate is suspended in normal saline so that 1 cc. contains the proper number of flocculating units. This is determined by testing the anti-toxin on guinea pigs, six weeks after they have been injected with a single dose. After experimentation, the manufacturers found that a dose of five units would protect a guinea pig against as much as 450 minimum lethal doses, therefore they advocated the use of a dose of five units or one-half cc. of the standard as advisable.

Graham, Murphree and Gill of the Alabama State Board of Health make the following reports and comments: "The results of immunization of children clearly indicate that a single injection of the alum precipitated toxoid results in an immunity in a high percentage of cases. A single injection seems to be as effective as two or three injections of the unprecipitated toxoids. The group of children, who were known to be strongly Schick positive prior to the injection of toxoid, yielded 92.4 per cent completely negative Schicks from two to six months later with only a 1 cc. injection."

Graham, Murphree and Gill summarize their results as follows: "A single injection of from 5 to 10 units of precipitated alum toxoid has rendered 171 or 92.4 per cent of 185 strongly Schick positive children Schick negative. Of 613 children, 592 or 96.6 per cent, were Schick negative when tested from two to four months aft-

*Read before Section on Pediatrics, 42nd Annual Meeting, Tulsa.

er a single injection. The original immunity status was unknown, but 72 per cent were pre-school children, where the highest rate of susceptibility is found."

In a later report Baker and Gill confirm the earlier work of Graham, Murphree and Gill. They obtained a percentage of 100 per cent Schick negatives in 197 originally Schick positive children. In another group of 1400, not previously Schick tested, they obtained 99 per cent Schick negatives after immunization with one injection.

They corroborate their own experience with that of others with whom they have communicated. McGinnis and Stebbins of Virginia in a group of 579 Schick positive children obtained approximately 95 per cent negative Schicks with one injection. Massey of Maryland reports 98.8 per cent negatives in a group of 93 colored children.

So, with a great deal of confidence, I started my series, using at first only one-half cc. or 5 units of the standard alum precipitated toxoid as advised by the manufacturers. My series contains only 40 children. As the results were so poor in comparison with those with the unprecipitated I deemed it advisable to return to my former methods. The degree of susceptibility of these children was unknown prior to the injection. Two months after the dose of precipitated toxoid, I only had 25 Schick negatives out of the original 40, making a percentage of only 62 per cent, which was far below that of the other reported series and investigations.

The original investigators and manufacturers claimed a minimum of reactions, which, of course, is of paramount importance. My experience parallels theirs. Of the 40 children injected, only one had any reaction whatsoever, and in that case I had accidentally injected the dose intracutaneously instead of sub-cutaneously. An induration and redness persisted for about six weeks, without any general manifestations, finally subsiding with no complications. Even though no reactions have been observed, we must not disregard the possibilities of reactions to even small quantities of alum. It is reported that when small quantities of the soluble salts of alum are introduced into the circulation they produce a slow form of poisoning characterized by motor palsies and areas of local anesthesia with fatty degeneration in the kidney and liver. The nervous symptoms have been shown by Doelken to be due to anatomical changes in the nerve centers. There are often symptoms of gastro-intestinal inflammation, which is, presumably, the result of the effort of the glands of the intestinal tract to eliminate the poisoning.

In conclusion, therefore:

1. While my series of 40 is quite small, I can only report a percentage of 62 per cent Schick negatives from one injection of the alum precipitated toxoid. This is quite contrary to the reports of the original investigators and the manufacturers.

2. While reactions were negative, the possibility of the toxicity of alum, even in small quantities, must be borne in mind.

3. While the possibilities of an immunizing agent, which will produce as high or higher antigenic titer as the unprecipitated toxoid with only one injection, is most encouraging with its saving of time, effort, and expense, especially in public health work, the present product, alum precipitated toxoid does not bear out its claims, according to my experience.

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FATE OF THE "GOOD CHRONIC" CASE OF TUBERCULOSIS: YARDSTICK FOR RESULTS OF THORACOPLASTY

In order to determine what happens to "good chronic" cases, Lawrence Brown, Saranac Lake, N. Y., and Homer L. Sampson, Trudeau, N. Y. (Journal A. M. A., Sept. 22, 1934), studied 336 patients at the Trudeau Sanatorium and forty-seven patients treated in the village of Saranac Lake. The condition of the patients was noted at the end of five and when possible at the end of ten years. Few of these patients received any form of surgical treatment and if so they did worse than those who received none. At the end of five years 80 per cent of the "good chronics" among the Trudeau patients were alive and only 38 per cent of the "bad chronics." Of the "good chronics" 54 per cent were at work and of the "bad chronics" only 12 per cent. The "good chronics" do remarkably well and their conditions show little change in the number working at the end of ten when compared with those at the end of five years. During the first three years 14 per cent of the "good chronics" and 50 per cent of the "bad chronics" die, while at the end of five years the figures are, respectively, 19 per cent and 63 per cent and at the end of ten years 32 per cent and 75 per cent. The difference between the results of treatment in these two groups is very striking. Poor results were obtained from ineffectual artificial pneumothorax.

A GENERALIZED SKIN ERUPTION WITH GASTRO-INTESTINAL INVOLVEMENT DUE TO TWO DIFFERENT SPECIES OF FUNGI*

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Although this case first came under our observation several years ago, we believed that a report of it was warranted at this time because of the rarity of such an extensive involvement by fungus organisms, because of the interesting mycological findings, and because of the experimental therapy tried during the past year.

It seems that in this case we are dealing with two fungus organisms: (1) an involvement of the oral cavity and gastro-intestinal tract with monilia albicans, and (2) microsporon infection of the nails, hair and skin. The microsporon infections, of course, are not rare, but these yeast-like organisms—the moniliae—are creating increasing interest as etiologic factors in various diseases.

Bonorden[1], in 1851, described a monilia isolated from decayed wood. In 1906 Rajat[2], a Frenchman, reported the isolation of three varieties of this fungus from cases of thrush. Although the moniliae have been commonly associated with thrush and tropical sprue, numerous dermatoses have been attributed to this yeast-like fungus. Wachowiak[3] suspects the moniliae as the causative organism in psoriasis. Sensitization of this organism has been reported by Frost and Sutherland[4] as "moniliatids". Plaus, Hesselton and Borts[5] isolated thirty-nine strains of moniliae from vaginal secretion. Isolation of moniliae from cases of bronchial and lung infections have been reported.

Quite recently in the American Medical Association Journal, Bakst[6], of Boston, discusses three interesting cases of pulmonary moniliasis, and Traut[7], et al., of Chicago, report moniliasis of the skin in two diabetic cases. Greenwood and Rockwood[8], of Boston, report a fatal case of monilial infection of the skin, and Lewis[9] a fatal case of pulmonary and gastric moniliasis. The association of monilial infection with chronic debility diseases has often been noted (Boggs[10]) (Joekes and Simpson[11]) The organism has been found frequently as secondary invaders in pulmonary tuberculosis and neoplasms of the lung.

*From the Department of Dermatology, Crippled Children's Hospital, University of Oklahoma, service of Dr. Everett S. Lain, and read before Section on Dermatology, 42nd Annual Meeting, Tulsa.

LABORATORY EXAMINATIONS

The blood counts were made on three different examinations. One made December 5, 1933, showed 4,400,000 red blood cells; 6,000 white blood cells; 72 polymorphonuclears and 28 lymphocytes.

Blood cultures have been constantly negative. The blood sugar was 96.5 mg. and the urine was normal. A roentgengram of the chest showed only a slight fibrosis around the hilus.

Extemporaneous preparation from the tongue surface in 40% NaOH showed a tangled mass of delicate septate mycelium with an occasional terminal bud. NaOH preparation from the skin showed a much larger type of mycelium without terminal buds.

Scrapings made from the tongue planted on Sabouraud's agar at 37° C. produced, in twenty-four to forty-eight hours, a creamy, shiny, moist colony. Young cultures showed almost entirely yeast-like cells with a few branched, rudimentary mycelium. Older cultures showed more myecelium and fewer yeast-like cells. In a gelatin stab the fungus grew with an inverted pine tree appearance. No ascospores were ever found.

Maltose and dextrose were fermented with acid and gas; sucrose with acid only. Lactose was not attacked. One-half cc. of a heavy suspension of the organism when injected in rabbits produced death in two or three days. Autopsy of the animals showed the formation of small, multiple, disseminated, whitish nodules over the surface of the kidney and heart from which smears showed yeast-like cells and short, branching mycelium.

PRECIPITIN TESTS

Extracts of this organism prepared by

the method described by one of us (Dr. Lamb[4]) when laid upon a serum from a rabbit previously immunized with M. albicans gave a precipitation of 1:500 dilution, while serum from rabbits immunized with M. parapsilosis and M. kruesei, two other types of moniliae, showed a titre of only 1:50 to 1:2, respectively, with this extract. These tests all seem to prove this organism to be monilia albicans.

Precipitin tests done with the patient's serum have varied. Several times a titre of 1:250 was produced; other times a very low titre was produced.

These same fungi were isolated from her feces, but we could not recover any monilia from her nails, skin or hair.

From different sites of the skin and hair, cultures were made. When planted on Sabouraud's agar at room temperature cultures of a fawn-colored, wooly fungus with a lighter tuft in the center were repeatedly produced.

Microscopically the mycelium was fine and septate. Long, narrow branches of the aerial mycelium, swollen at the ends, were recognized as the so-called "spindle spore," which is typical of the microsporon lanosum. The ringworm fungus is found more frequently in cases of animal origin and is not a strictly human variety.

HISTOPATHOLOGY

Sections of skin were removed at the active edge of a lesion. Stains were made for fungus which were positive by the Brown-Brenn[5] stain in several of the hair follicles.

The section stained with hematoxylin and eosin showed a thickened, irregular epithelium covered by a parakeratotic scale. The epithelium is edematous with extra and intra-cellular edema and considerable perivascular infiltration in the upper corium.

CASE HISTORY

Elizabeth King, age 23, was admitted to Children's Hospital in 1927 for a sore mouth and extensive skin disease. The mouth condition had been present for seven or eight years, and the skin involvement for three or four months. The condition of the mouth had not at any time interfered with eating. The condition has been progressive and treatment has only, for short intervals, changed its appearance. She has been unusually free from gastrointestinal symptoms.

Physical examination: A well-developed white girl, age 23, not acutely ill. On the right side of the neck, on arms, and on abdomen are irregular, erythematous plaques, with elevated borders and more clear in the center. They vary in size from 1 cm. to 3 cm. in diameter. The finger nails and toe nails are rough, elevated, opaque, and brittle. The cuticle is involved in an inflammatory condition. The lesions are sharply marginated and the central areas are scaly. The tongue is deeply fissured, and covered with a grayish-white, heavy, moist coating. The buccal mucosa is likewise involved. Vaginal and rectal examination was not made upon admission. The mouth and skin lesions have grown progressively worse during the past seven years. She now swallows with difficulty and the involved skin is thicker and eczematoid.

TREATMENT

The mouth condition was treated with gentian violet and other local applications by the dental department and was unchanged by therapy. During the first few years local applications, ultraviolet light, and superficial x-ray were used on the skin with discouraging results.

In August, 1932, five years after first admission, trichophyton extract was started and used intracutaneously for five months with little change in the condition. In January, 1933, an autogenous suspension of monilia albicans isolated from her mouth and heated at 56° C. for one hour was begun. It was given intracutaneously and produced moderate necrosis of the skin at the site of injection. By May, 2, 1933, a great improvement in the skin was apparent, but on May 6, 1933, she developed a severe secondary infection of the hands and immediately suffered a severe relapse of the skin lesions. Local applications and hot packs cleared the hands. Subcutaneous injections of Lilly's entolyslate and typhoid vaccine were given during June, 1933, with little or no effect. She continued to take large doses of K. I.

In February, 1934, we started giving intracutaneously an extract of microsporon lanosum isolated from her skin lesions. This was prepared according to the directions of Muskatblit[6]. It is thought to contain both the exo and endotoxins.

At the time this therapy was begun the arms were relatively free of skin lesions. The first injection produced a severe reaction and was soon followed by an extensive involvement of the arms with lesions similar to the original ones. This was given in increasing doses for one month and then discontinued.

On April 5, 1934, we started artificial fever therapy using a conditioned air cabinet heated with infra red elements. We gave six treatments at irregular intervals of four to seven days. The temperature was raised as high as 106.2° F. and sustained for one to three hours. This did not

accomplish any striking change in her condition, but everyone who has examined her since feels that the skin is less infiltrated.

DISCUSSION

In this case we have a history of monilia albicans infection of fourteen to fifteen years' duration, and a generalized skin involvement due to microsporon lanosum of seven years' duration. She has been seen by our leading dermatologists, including Fox, Sutton, Denny, and others for seven years. Many suggested types of therapy have been tried. We felt that the use of the monilia suspension would help to establish an active immunization. We feel that vaccine therapy in treatment must necessarily be limited in its usefulness to those cases in which the stimulus already provided by the infection is inadequate to call forth a response, while the host's tissues are in a position to respond if an adequate stimulus is applied. This probably confines its successful use in treatment to localized lesions instead of acute or generalized infections. We tried to justify the use of typhoid vaccine and bacteriorphage on a basis that they might act as a non-specific stimulus.

We used the extract of microsporon lanosum isolated from her skin lesions on a basis that it might desensitize her to this superimposed infection and enable her better to produce antibodies to the gastrointestinal monilia infection. We recently used artificial fever therapy, feeling that it would increase metabolism, cell permeability and phagocytosis, thereby perhaps stimulating antibody response. We appreciate the fact that there are probably innumerable factors concerned with infection and immunity. Many of these factors may be entirely non-specific in their effect. Under such influence may be placed diet, acidity of stomach upon gastric and duodenal bacterial flora, proper balance of vitamins, fatigue, changes in temperature, changes in humidity and atmospheric pressure, seasonal fluctuations, presence of subnormal or unusual amounts of normal chemical constituents in the body. Beerman[15] has said that his cases of leather dermatitis involved elements of specific allergic sensitivity and of contributory or induced sensitivity dependent on focal infection, fungus infections and injuries to the skin itself, and on certain constitutional factors. We think that this is equally true in our own case.

SUMMARY

1. A double infection of both monilia albicans and microsporon lanosum.

2. Recovery has been retarded by a collapse of patient's immunity mechanism.

3. All treatment has been unsuccessful.

4. Immunity and infections are dependent upon many factors.

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THE DIONNE QUINTUPLETS

During the last 500 years there have been thirty-two authentic cases of quintuplets recorded. Of these, only one group of all five lived about an hour, and of another group, only one of the five lived for fifty days. To these records Allan Roy Dafoe, Callander, Ont. (Journal A. M. A., Sept. 1, 1934), adds a short history of the birth and early care of the Dionne quintuplets. At the time of writing (July 28, 1934) the five babies are thriving and healthy at the age of two months and are gaining steadily in weight. He expresses his thanks to the newspapers for the invaluable supplies and equipment and states that it would be impossible to thank the many people "in" and "out" of the profession whose help has made it possible to keep the children alive, and also the work of the Canadian Red Cross Association, which from the first has given cordial cooperation and has taken over a good share of responsibility for the welfare of the babies. Above all, the family and he are grateful to the Ontario government, which has supplied the whole family with food and clothing, has repaired the road and has definitely supported the efforts against public display. With such cooperation he hopes the babies will continue to thrive and will be a credit to their family and to their country.

PNEUMOPERITONEUM AS A PRACTICAL PROCEDURE IN GYNECOLOGY*

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ADA

I do not wish to come before you with an apology for my paper, but in self-defense I wish to state that I am painfully conscious of the fact that I have undertaken to write on a topic in which I am far from proficient and that I have done too little work in this field to justify any sort of conclusions. My excuse for presenting it at all is that I accepted the invitation knowing that I would be compelled to do something with this very interesting new development in the field of diagnosis. But, alas, the time has been too short and my opportunities have been too limited to accomplish much.

However, the imperfect paper has this to recommend it, viz.: It deals with the practicability of the procedure in the small centers and as an aid in every-day work by those of us who do not have access to all sorts of consultation, technical and otherwise.

The conclusions of all the men who have used pneumoperitoneum in the large medical centers are highly in favor of it, and many of them consider it indispensable. Granting it is valuable under such circumstances, we are interested to know if you and I could profitably employ it at the crossroads.

I am afraid some surgeons may not wish to find a non-surgical procedure for determining the state of affairs inside of the peritoneum for that would rob them (if, indeed, any such exist) of the time-honored system of determining in a perfunctory sort of way the condition to be surgical and depending thereafter upon their skill to deal with whatever presents itself when the abdomen is opened. The exploratory operation has been overworked, and has done its share to bring surgery into a state of disrepute.

A little investigation will quickly reveal how unsatisfactory a manual pelvic examination really is for we find the number of opinions secured is limited practically only by the number of consultants and especially so in obese subjects; in those who have had previous pelvic surgery; early pregnancy, and in young virgins.

Despite the fact that pneumoperitoneum is a relatively recent diagnostic procedure there has developed quite extensive literature on the subject.

The Rubin test was a great boon to gynecologists but it is not yet used to the extent that its value merits. When lipiodol was introduced to supplement or replace the older method of depending on the intra-uterine pressure readings for determining tubal patency as well as for vizualization of the uterus and tubes, a still more remarkable advance was made. A further advance in pelvic diagnosis was made when, about fourteen years ago, Peterson discovered and recommended the use of the x-ray in connection with pneumoperitoneum. Perhaps the most valuable contribution since then was made in 1926 when Stein published some work on the combined use of iodized oil and pneumoperitoneum. In 1932 this author had done over 1,000 of these combined examinations and finds it continually more effective and valuable as a diagnostic measure. While this procedure has been used largely as an aid in gynecological conditions, Carelli especially has used it to visualize all of the solid organs inside of the peritoneal cavity and it is my prediction that as the technic is perfected that a far wider range of usefulness will appear than has yet been developed.

Air was first used as a medium, then oxygen, and now carbon dioxide has been universally adopted because of its safety and also because of its rapid absorption. This gas was formerly introduced via the cervix and tubes and served the double purpose of testing tubal patency and of permitting the x-ray visualization of the pelvic organs. Three objections may be raised to this method. First: It is very difficult to secure an air-tight compression at the os by means of the rubber disc

*Read before Section on General Surgery, 42nd Annual Meeting, Tulsa.

on the canula used in the cervix. Hence we find leakage very often and we never know just how much gas actually enters the peritoneal cavity. This difficulty is especially prone to develop in cases of cervical lascerations. It is therefore necessary to repeat the test with all the undue trouble and expense entailed. Furthermore, it often happens that the very case in which you need it most is one of suspected pregnancy and in that event it is never safe to employ it. Besides, it is, of course, ruled out in cases of known patency of at least one of the tubes. I have found it also to be considerably more painful and more disagreeable to the patient to use the trans-uterine route. I think therefore that the trans-abdominal route should be routinely employed for the introduction of the carbon dioxide, leaving the lipiodol injection into the uterus to outline the uterine cavity and to determine the state of the lumen of the tubes. My experience agrees with Stein that a combination of two procedures is far more valuable than either used alone, in case there are no contra-indications to the introduction of a foreign body into the cervix.

The minimum equipment for the practical utilization of this procedure is: (1) Suitable x-ray with a Bucky diaphragm, the position of which can be varied. (2) A Keyes-Ultzman type of silver cervical canula and a tank of carbon dioxide. It would be well to own the special table as developed by Stein and devices for turning the patient as devised by Carelli, but since it will be a long time before all of us possess such equipment, I wish to present the way I do it in just an average office, for it is an office procedure: I use a Braasch-Bumpas urological table with a built-in Bucky which permits any degree of elevation of the hips, and the carbon dioxide apparatus designed by Dr. Aldridge. This device permits us to measure accurately the amount of gas used as well as the pressure under which it is injected. This amount depends on the type of patient and on other circumstances. The large quantity, as high as eight liters, as used by Carelli, is neither desirable nor necessary for the examination of the pelvic organs. We use a minimum of 400 ccs. and a maximum of 1200 ccs. and depend on the distention and apparent distress of the patient to determine the interval amounts. I have observed that the intra-abdominal pressure varies greatly in different subjects, being as low as 10 mm. of mercury sometimes. When the pressure is raised above 40 they complain of considerable discomfort.

When lipiodol is used in connection with the gas, as it should be practically always in the female, a Keys-Ultzman type of canula fitted with a hard rubber tip with which to close the os and some device for holding it firmly against the cervix are essential. The self-retaining speculum devised by Stein is valuable but not essential as this function may be performed by an assistant. A bullet forcep for grasping and holding the cervix completes the armamentarium.

A slender needle with a short bevel is introduced into the peritoneal cavity and attached to the gas machine which has been previously adjusted to deliver the gas slowly. The recommended site for inserting the needle is two inces below the umbilicus and in the linea alba, but almost any site will do. No danger need be anticipated from this simple procedure if one is careful to see that no blood is in the needle and if the usual asceptic precautions are used. If the needle has not entered the peritoneal cavity a superficial emphysema will result but with no harmful effects. This can be determined early by noting the steady rise of the mercury.

The contra-indications such as pregnancy, gonorrhea, menstruation, other uterine bleeding, etc., do not hold when the trans-abdominal route is used. In fact, no serious contra-indications occur to me except advanced myocarditis or general debility in which any degree of shock might prove harmful. Practically all of the men doing this work report it to be free from danger both as to immediate and subsequent harm. There is certainly no more danger than an ordinary tap for the introduction of saline into the peritoneal cavity. The carbon dioxide has definitely proven to be harmless, rapidly absorbed, and free from bacteria as it comes from the tube.

There is very little pain when only a diagnostic amount of gas is used. In a recent case I explained to a woman what was being done and what to expect. She complained long and loud of all I had led her to look for and so greatly did she moan that I decided to stop short of the intended amount of gas, when I discovered that the side stop cock on the tube had been letting all of the gas escape and she had received not a bit of it. Pain in the shoul-

der region is fairly constant if large amounts have been used. In the beginning, owing to the beginner's natural hesitancy, I used far too little gas which resulted in inferior pictures. The cavity should be fairly well filled and with increasing experience I am using more gas.

When it has been determined that gas has been into the peritoneal cavity it frequently happens that the column of mercury rises, but a slight to-and-fro movement of the needles will free the lumen, as will be indicated in the drop in the pressure.

The chief point in the preparation of the patient is to have the bowel thoroughly evacuated for two days previous to the examination. She should have a saline laxative and be placed on a diet of small residue. The bowel should be evacuated just prior to the examination.

The most discouraging feature of this procedure is our inability to read the x-ray plates. This same difficulty is experienced in all phases of x-ray work where expert consultation is not available, but we do not refrain from x-raying a bone, a joint, a chest for that reason, for while we may not be able to extract the most information, sufficient knowledge is acquired to justify the work. These x-ray films are not especially difficult to interpret, and in doubtful cases we have found the roentgenologists of the medical centers cooperative and helpful.

RECAPITULATION

1. Pneumoperitoneum is a marvelous step forward in pelvic diagnosis, and, in fact, in many other intra-abdominal conditions.

2. It is a safe procedure, but it requires rigid technic. It can be safely done in the office.

3. Its contra-indications are few and are definitely defined.

4. The necessary equipment is not elaborate or expensive and is available to most physicians.

5. Carbon dioxide is superior to all other materials that have been used.

6. It should not be used routinely, but only when a careful history and accurate examination does not suffice and only complementary to these procedures.

7. Many exploratory operations can be avoided by its use.

8. The trans-peritoneal route is by far the most satisfactory, but in gynecology, and where there are no complications, it should be used in combination with trans-uterine lipiodol.

9. We live in a small city with all the resultant disadvantages in the way of expert consultants, limited equipment, and scarcity of clinical material. We have neither the time nor the means to do research.

No originality is claimed for anything mentioned in this paper, but our one year of experience encourages us to continue its use and to recommend its trial to others so situated, with the belief that as we progress in the required technic a whole new field has opened to the diagnostician; that many mistakes heretofore unavoidable may be anticipated; and that many useless exploratory operations may be left undone.

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INTESTINAL PARASITIC WORMS IN THE UNITED STATES: THEIR DIAGNOSIS AND TREATMENT

Harold W. Brown, Nashville, Tenn. (Journal A. M. A., Sept. 1, 1934), has compiled data in as concise a form as possible which should be of help to the general practitioner in the treatment of individual cases of infestation by any of the common intestinal helminths found in the United States. The ridding of a patient of intestinal parasites has for centuries been considered a serious procedure, and violent methods have been used to that end. Much of this treatment was felt necessary owing to the inefficiency of many anthelmintics, and it is not surprising that the treatment of intestinal parasites was carried out with a good deal of dread because of the danger of such procedure. All the older and more commonly used anthelmintics are occasionally quite toxic, and it is well known that each causes severe intoxication in certain persons, this usually being ascribed to the idiosyncrasies of the patient. Although thousands of cases have been treated with some of these substances without a fatality or definite signs of intoxication, severe injury and even death have followed without any warning the administration of these anthelmintics in proper therapeutic amounts to apparently normal persons. During the past ten years there have been found for the treatment of certain types of intestinal helminths several new substances which are fully as effective as any of the older remedies and which, as far as is known at present, can be given without fear of intoxication. On the other hand, there are no effective and safe drugs for all types of intestinal helminths. For successful treatment of patients harboring helminths, one must consider the life cycle of the parasite, the method for determining its presence, the substances that may be used most successfully against a particular parasite and the details of their administration, as well as methods of estimating the effectiveness of treatment. It should be remembered that these various species of parasites of such extremely different types must be considered and treated individually, for a drug that will remove practically 100 per cent of one type of parasite may be ineffective against another.

THE NEURASTHENIC PATIENT*

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TULSA

During the past few years, with the trend of medicine directed into the more highly specialized fields, the study of the patient as a whole has become almost extinct. Patients are shunted from one doctor to another in search of some obscure cause of their troubles. No one of those consulted seems to assume the responsibility or to make a close study of that individual. When no definite trouble is discovered for which a cure might be effected, or the patient has had first one then another operation without relief, and is finally dubbed a "damned neuro," is it any wonder that he begins to lose confidence in the profession of medicine, or at least in some of those who practice it? We are all guilty of mistakes, but that is no reason why we should not profit by them, and upon the next occasion give more consideration and study to each individual in order to prevent wrong judgments or erroneous diagnoses.

Quite recently we have been confronted with the trend of outside influences to try to force upon us state medicine. If, and when, it comes, the patient will, in my thinking, be worse off. The proposed plan, to be of any value, would have to safeguard the quality of medical service, provide preventive and curative services, and preserve the personal relation between patient and physician. These major recommendations, I am frank to say, would hazard the success of group practice, which would preclude much attention for the individual.

We hear a great deal about the rise to prominence of the various cults, nostrums, and the increasing use of patent medicines. A great deal has been said about legislation to control them, but that is only a make-shift, temporary relief. The most important thing is for all of us to do more real work in studying our patients, to keep up with the more recent advances in medicine, and to do less talking about what the other fellow is doing. This constructive procedure will do more to restore the waning confidence of the public than can well be imagined.

This condition can be corrected, but we will have to begin at the source, namely, our medical schools. Sullivan[1] says: "When medical training is made to include precise information about psychogenic forces in disease, then, and only then, will the physicians be adequately trained for management of all people."

How many of us, even now, know very many of the fundamental principles of medical psychology? We have been taught a great deal about pathology, bacteriology, surgery, and chemistry, but very little about psychogenic factors, emotional disturbances, and functional disturbances. We have had the principles of foci of infection so well grounded that a great many people in whom none can be found, are often told that there is nothing wrong and that their troubles are only imaginary.

Again, the surgeons believe that by surgical removal of various organs, that all of the patient's troubles would be over, because they can always cite one or two cases where certain procedures resulted in the individual's complete cure. We are not condemning surgery, but we are condemning useless surgery, that which is administered in these obscure, so-called chronic cases. It is our opinion that we should first know everything about the patient, then decide. We have all seen many individuals who have had three and four major operations for obscure addominal pain.

In the past few years newer procedures have been forthcoming. In reading the literature we can almost explain any phenomenon on the basis of allergy. Yet in actual application our results are very disappointing.

Later, with the isolation of new hormones, the endocrinologists are explaining everything on the basis of endocrine hypo or hyper function. However, the knowledge is yet too meager for us to arrive

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at any conclusions as to what we may expect.

All of us in practice recognize that a certain per cent of our patients present a nervous element, either primary or as a consequence to a physical disorder. But I most seriously question whether or not we realize what a great percentage this includes. Moersch[2] in the analysis of five hundred consecutive patients at the Mayo Foundation reports psychogenic factors in forty-four per cent. Stevenson[3], in studying one hundred and fifty patients in a gastro-intestinal clinic, states that there was an important emotional problem in two-thirds of the cases.

Classification of the patients who present themselves to the physician for examination is as follows:

1. Those that have a definite, clear-cut disease entity.

2. Those that have definite, obscure trouble, but with the condition often masked by nervous or emotional symptoms in which it is difficult to differentiate the exact cause.

3. Those that are emotionally unstable or who have constitutional inadequacies.

4. The true psychosis.

In this paper we intend to deal with the second and third classes. It is not our intention to consider the true psychosis, or those in whom there is a clear-cut disease present.

Definition of these types which we are to consider is found in the following cases:

4. Illustrating type No. 2, we find a female, age fifty-eight. The patient complained of vertigo, nausea, headache, roaring head. This condition began acutely after the death of her mother in 1915. However, she had had headaches since menstruation began. The vertigo, nausea, and headache lasted a few days, and were severe for a few hours. In 1921 the patient began to have severe attacks which lasted ten or twelve hours. She was told she had malaria, also bilious attacks, and menopause. Examination was negative, but during the attack the patient had nausea, vomiting, and headache for twenty-four hours. Nystagmus was present. She was unable to stand and would fall if she got out of bed. The attacks began acutely by falling as in epilepsy. A diagnosis of Meniere's disease was made, for which quinine, six grains a day, was prescribed. This has stopped the attacks for one and one-half years.

In illustrating type No, 3 we find the following case applicable:

5. A young girl, age twenty-six, complains that she has not felt well for six or seven years. She is rundown and tired. However, at times there are intervals of several months when she may feel well. She is nervous, constipated, has no appetite, no energy. She is tired and worn out. For several months she has vomited each morning before or after breakfast. After every meal she has indigestion. Menses are regular, but the patient has indigestion, headaches, and visual disturbances. She is unable to gain weight. She had recently been examined and told that she had a chronic gall bladder disease, that the gall bladder must be removed.

Family History: Mother living and well; neuralgia before menopause. One sister had sick headaches. Physical examination was essentially negative. A test for vagotonia showed marked exacerbation of symptoms with pilocarpine; relieved by atropine.

On consideration of the mental side, it was found that the patient was practically the sole support of the family. Her position as stenographer was one that she did not like. She would get up in the morning wondering whether she would be sick, or whether she would feel good all day. At breakfast she would become nauseated.

By psychotherapy and change of position and outdoor exercise she now, two years later, has gained weight and feels good. There is no nausea or headaches, and she still has her gall bladder.

I believe that if this girl had had her gall bladder removed she would have had to have another operation sooner or later, because the cause would still have been present.

To understand more about individuals and personality, it would be well to briefly describe some of the types of individuals and what we may expect to find in each. First, I should like to define *constitution* as given by Pende[6]: "The constitution is the morphological, physiological, and psychological resultant (variable in each individual) of the properties of all the cellular and humoral elements of the body, and of the combination of these in a special cellular state, having a balance and functional output of its own, a given capacity for adaptation and a mode of reaction to its environmental stimuli. Such a resultant is determined primarily by the laws of heredity and secondarily by the disturbing influences exercised by the environment upon the individual's hereditary plan of organization."

The types are as follows[7]:

1. Harmonius or normosplanchnic.

2. Megalosplanchnic or brachymorphic —hypervegetative.

3. Microsplanchnic or dolichomorphic —hypovegetative.

4. Impure or mixed types.

Number 2, the megalosplanchnic type, is characterized by medium stature or below with an excess of bodily mass in relation to stature. The extremities are short in proportion to the trunk. The feet are longer than normal with a tendency to flat feet. Hands are broad and short.

The head is frequently large with a high, sloping forehead, Premature baldness is frequent. There are small, shifting eyes; short, broad nose, thick lips, large mouth, broad, round chin.

The face is often pentagonal in shape. In males the beard is luxuriant, though coarse, in contrast to but little hair on the head and eyebrows. The neck appears large. There are often fat deposits on the back of the neck and other places—pseudo lipomata. The thorax is short and large. The abdomen is conspicuous, the upper part being larger than the lower part. Pelvis is small. Skeleton muscles are short and thick. The skin is tough and oily. In megalosplanchnic individuals the lungs are short; the heart shows a tendency to hypertrophy. The stomach is of the short, horizontal type, and generally large. The genitals are usually normally developed.

This type is marked by congenital hyperplasia of the lymphoid organs. The blood may show a slight polycythemia and hyperchromemia, but variation may tend toward the opposite. There is also a disposition to uric acid and diabetic symptoms. Potassium predominates over calcium with a tendency to alkalosis and retention of chlorides in the tissues.

Of this general group there may be several varieties:

1. The hypothyroid variety with parasympathicotonic nervous orientation. In this type we see moon face, porcine eyes, oily skin, early white hair. There is a tendency to myxedematous lower extremities; migraine, constipation, muscular and articular pains, muscular asthenia. Movements are slow. Psychic reactions are slow. The individual is of average intelligence, but never brilliant. The character is kind, cordial, expansive, and optimistic. The sexual function is normal.

2. The hypopituitary type tends to infantilism. The beard is fine. The stature is lower and is associated with a tendency to adiposity, especially in the lower abdomen, breasts, and pubes. The skin is pale and delicate, and the hair is fine and thin. The hands and feet are small. Genitals show a lack of development with a deficiency of sexual energy; frequently there is sterility. The character is good, but is subject to great changes of mood, to over-excitement or depression, and to impulsiveness. In both of these types the blood pressure is low and a great tolerance for sugar is noted.

3. The hyperadrenal variety is marked by a well-developed heart, especially on the left side; high arterial pressure, and high red blood count. The muscles and strength are well developed. This type may have hypertrichosis. The character is active, impulsive, violent, restless, and strong-willed. The skin is dry. Sexual function is normal.

4. The hypergenital variety shows excessive development of the sexual characteristics. These subjects are of low stature with short legs, large skull, early baldness and white hair, poor teeth, and a tendency to obesity. There is a lack of muscular development and arterial hypertension as found in the preceding type. The character is euphoric and expansive, with but mediocre intelligence.

In this general group we expect to find disease manifestation more characteristic of the arthritic group, namely, uricemia, gout, diabetes, obesity, asthma, asthmoid bronchitis, various chronic or recurrent rheumatisms, lithiasis, chronic pruritis, recurrent desquamative dermatosis, mucous colitis.

5. The constitutional vagotonia variety (Eppinger and Haus[5]) shows an exaggerated oculo-cardiac reflex; respiratory arhythemia; brachycardia; hyperperistaltic phenomena; spasms in the stomach, intestine, bladder, uterus; mucous colitis. Also we encounter protein intoxication and anaphylactic crises and eosinophilia.

Number 3. The microsplanchnic hypovegetative constitution is characterized by a stature which is often higher than the average, but may be average or less. The fundamental characteristic is a lack of proportion of the trunk and extremities with a deficiency in weight (constitutional thinness). The size of the abdomen is deficient in comparison with the thorax, and the exaggerated length of the extremities contrasts with the length of the trunk. The head is greatly developed in the parietal and frontal regions with a flattening in the occipital region, and a high vertical forehead. The face is narrow with a pointed chin. The skull is small in proportion to the stature. The hair, which is thick and more or less wavy and curled, grows low on the forehead and temples, and is coarse and shiny. There is no tendency to seborrhea or baldness. The eyes are large; the nose is long and narrow. The skin is thin and smooth with very little fat. The beard is well devel-

oped, and women may have down on the upper lip. The teeth are often excellently formed, but may be irregular. The neck is long and thin—a swan neck. There is a long thorax which is flattened in antero-posterior direction. The abdomen is found to be small in size compared to the thorax. It may be rounded and prominent, enteroptotic abdomen. The abdominal walls often are hypertonic, but in women they may be flaccid and prominent. In women the hair comes up from the pubes along the linea alba, in the intermammary sulcus, and around the nipples. There is a marked growth of hair, especially over the forearms and legs. The skeletal system is well developed. The muscles may be flaccid or well developed. Hands and feet are long and slender with long fingers. Not infrequently the hands and feet are cold and bluish and covered with a cold perspiration; however, the opposite may be true.

The sexual development is rather variable. It may be pronounced, or in males it may tend toward the feminine characteristics. In females a narrow pelvis, small breasts, hypoplastic uterus, and masculine distribution of hair are noted. Those microsplanchnics in whom the hypogenital state is more pronounced are called the hypogenital type.

In considering the internal organs, the heart is often found to be small, in a vertical position, with a long and narrow aorta. Blood pressure is always low and the pulse is rapid and unstable. We may find the vascular system normal, but there may be a hyper-excitability or sympathicotonia. The blood usually shows a chloro-anemic character with hypoglycemia. There is a predisposition to tuberculosis. There is an atonic and ptotic stomach, gas, poor appetite, and difficulty digesting large quantities of food. Weakness of the kidneys is evidenced by orthostatic albuminuria, phosphaturia, and psychic glycosuria.

Oligodipsia is characteristic of many microsplanchnics, and oliguria is also found. There is an instability of fixation of water in the tissues. We find a tendency toward the predominance of the tonus of the sympathetic nerves as revealed by tachycardia, angiospasm, white dermographia, inhibitive gastric peristalsis, and hydrochloric acid secretion; cutaneous hyperthermia, especially in the extremities, emotional glycosuria, and exaggerated reaction to adrenalin.

Microsplanchnics are subject to tuberculosis, typhoid, dyspepsias, progressive pernicious anemia, gastric ulcers, neurasthenia, cardio-vascular neuroses, hyperthyroid, and Addison's disease.

Time does not permit to take up further the various inadequacies of the individual organs or systems.

Let us now consider our "neurasthenic patient" from the standpoint of an emotionally unstable individual who, when faced with the necessity of "fight or flight," is confronted with the dilemma either of being defeated in the fight or of losing his self-esteem by "fleeing," grasps at the surcease, sympathy, and attention offered by ill-health. That the emotional instability is a result of constitutional inadequacy which he has inherited, we do not doubt. Why some people belonging to these types should develop somatic symptoms under certain emotional stresses, and other people of the same constitutional type under similar stresses should have an entirely different set of symptoms or perhaps remain perfectly free from any complaints whatever, is not understood.

Granting an emotional instability as the underlying cause, what are the precipitating factors immediately concerned in producing physical symptoms? These may be many and variable, and to discover them requires much tact, understanding, skill, and observation. It is at this point that we as internists conforming to the present day trend in diagnosis, often make the mistake of divorcing the mind from the body and of seeking explanation for all the symptoms by physical and mechanical means.

Emotionally unstable patients are unconscious of the fact that their numerous pains and aches are in reality psychogenic in origin, and it does not occur to them to consult the psychiatrist. As a matter of fact it may require considerable tact on the part of the internist to convince these patients that they should consult a psychiatrist, since the major portion of the laiety associates mental disease only with insane asylums, locks and keys. Hence the diagnosis of these cases remains largely the function of the internist, frequently after the patient has spent many weary hours (and most of his money) and suffered repeated examinations in the hands of many physicians.

Although it is perhaps out of his province to delve too deeply into psychiatric

problems, it is of importance to the internist to familiarize himself with some of the most common factors underlying the patient's unconscious "flight into illness," and thereby to be enabled to make a positive diagnosis of a psychic conflict as being responsible for the patient's physical symptoms—the so-called "conversion reaction," rather than making a negative diagnosis of neurosis or neurasthenia simply by "ruling out" pathology by means of exhaustive clinical and laboratory procedures.

Edward Weiss[1], Fremond-Smith[2], Stevenson[3], Draper[4], and others to whom we have referred freely in this paper, have called attention to numerous of the more common psychic factors underlying physical complaints. A brief discussion of some of these follows.

The training which the patient may have had as a child may be reflected in, and the mechanisms developed during the early years maintained, throughout adult life. Having been over-indulged, possibly because of a parent's unsatisfied ambition to accomplish some certain aim in his own life, and made to feel perfect in the eyes of his home environment, the child is unprepared to meet the reverses and defeats and failures, some of which must inevitably come when he leaves the sheltered walls of his home. In order to maintain this self-esteem, and at the same time not endure failure, any chance pain or symptom is immediately, but unconsciously, seized upon as a means whereby self-respect may be retained and defeat at least not admitted. So they retreat into the outstretched arms of the adoring and oversympathetic household where as an invalid each wish is law, each act perfect, and each desire a command. This attitude is frequently carried over into adult life, where it is a common psychogenic factor underlying many complaints of physical ills. Frequently the statement will be made by the complaining wife that she *"so* wishes she might get well because her husband is *so* good to her," little realizing that the very fact of his goodness is aiding her "flight into illness."

Financial reverses and business failures, particularly during the past three or four years, have been responsible for many of the ills complained of by those individuals who are unable to accept defeat successfully. Maladjustments in marriage, and sexual inadequacy for whatever reason, be it fear, frigidity, disgust, improper sex-education, also furnish the necessary motive for fleeing into illness as a custodian of self-respect. Occupational maladjustments, especially where injuries and compensation are involved, are factors which are more commonly recognized and studied, because of the pressure brought to bear as a result of the insurance liabilities and damage suits.

There must also be considered the frequent interference in the function of various organs as a result of instability of the autonomic nervous system under emotional stress. The diarrhoeas which developed in a patient during the three-day interim between the drawing of the blood and the report that the Wassermann test was negative, was no less a diarrhoea because it was due to a psychic tension; likewise tachycardia, nausea, indigestion, polyuria, etc., are no less real when they are psychogenic in origin than when due to organic causes. And all of the factors which may be instrumental in causing a "flight into illness" as a defense measure, may also be instrumental in causing functional disturbances, the psysomatic reactions as described by Draper[4].

The symptoms which these patients present are innumerable and varied, and are, of course, well known to you. The following will serve further to illustrate the type of patient:

A widow, age 30, complained of weakness, exhaustion, ease of fatigue and difficulty in swallowing. There was a sense of pressure in the throat but no cough, hoarseness, or difficulty in breathing except for a sense of suffocation at times. There was no regurgitation of food. She had lost thirty pounds in weight in one year. There was slight vertigo and pain in the back of the neck. She was always tense, irritable and unable to relax, and her hands and feet were always cold. There was no abnormal pain, nausea, vomiting, diarrhoea, indigestion, or constipation. She had no urinary disturbance of significance. Menses were somewhat irregular, both in time and amount.

Her husband, who was twenty years older than she, had died two years previously. She had three children living and well. She had had an appendectomy, and salpingectomy five years previously.

Clinical examination showed nothing of consequence until blood study revealed a very rapid sedimentation time and an eosinophilia, whereupon proctoscopic and stool examinations revealed many cysts of endameba hystolica.

With great alacrity we pounced upon this discovery with perfect assurance that all would be well. This proved to be the case for a few weeks following treatment. Then, to our surprise, all of her old symptoms began to recur in spite of no further evidence of ameba, and blood examinations, including sedimentation test, indicated no evidence of infection. At this time further inquiry into the personal affairs of the patient revealed that a rift in a clandestine

love affair was in progress. Following the marriage some weeks later the patient began to feel much better.

We believe that during the entire period throughout which we were observing this patient, most of the symptoms were due to the psychic conflict and that the amebiasis was simply an incidental finding.

This case serves to illustrate two important points, namely, that the so-called "neuro" deserves the benefit of a thorough examination, and second, that the incidental findings should not be given the all-important consideration, but that in the course of the examination a study should be made which might reveal some psychic conflict which may be of greater importance than the discovery of some obscure pathology, the importance of which is so often over-emphasized.

The treatment of emotionally unstable patients is not easy. In the words of Noyes[5], "our theory of psychopathology is more highly developed than our technique of treatment." Each case offers its own particular problem, on the merits of which treatment should be undertaken,

In the first place we must realize that we are dealing with a human patient who has a mind and a personality not divorced from his physical being, and that his symptoms are due to unconscious mental conflicts and emotions.

It is necessary to win his confidence, This is perhaps most ably accomplished by and during frequent contacts occurring in the course of a thorough physical examination which at the same time permits more detailed study of the patient's personality and serves as the basis of later convincing the patient that his disease is not of an organic nature.

By education and explanation this patient must be made to understand the relationship of unconscious mental processes to somatic symptoms, and that his condition is not of an "organic" nature. This is very difficult and the accomplishment of it is perhaps more of an art than a science, and depends to a great extent upon the personality of the physician and the susceptibility and education of the patient. On the surface the patient seems to see the problem but many are unable to understand it sufficiently to gain much practical value or relief.

It is a mistake to tell the patient that he only imagines he is sick, for to him his symptoms are as real as life itself. Perhaps those same symptoms have become fixed ideas as a result of too much emphasis on incidental conditions by the numerous doctors who have been consulted, with the result that the patient is well nigh inseparable from his "heart condition," ptosis, acidity, autointoxication, biliousness, diets, pus, foci of infection and colitis with its worship of high enemas, flushings, etc.

It must be understood that many of these patients can only be helped, not cured. In some instances it is impossible to make the necessary readjustments in environment, as in the case of some marital relationship, occupations, or child-parent maladjustments.

In conclusion we wish to state that it has not been our intention to venture into deeply involved psychopathology, but to call attention to the fact that a very considerable proportion of the everyday problems confronting the average internist concerns patients whose symptoms are on the basis of psychic and emotional conflicts. It is one of the most common conditions we meet. We feel that we should *look* for the most common diseases and by doing this thoroughly the unusual will be discovered, if present. If the physician realizes that fact, we believe, with ordinary powers of observation and common sense management he will be able to cope with the illness of many of these people. In others the psychopathology may be recognized, but may be of such nature that its management may require the services of one more versed in the detailed ramifications of psychiatry. We believe that this will obviate the loss of patients to various cults, prevent much unnecessary surgery, reduce the cost of medical care to the patient, and finally re-establish confidence in the medical profession which is rapidly being lost.

SUMMARY

1. We have endeavored to show that the problem of the neurasthenic patient presents a definite challenge to the internist.

2. We have again called attention to the necessity of studying the patient as a whole in an effort to determine whether the physical or psychic factors predominate.

3. A brief description of the characteristics of various types of constitutions has been given.

4. Attention has been called to some of the common factors underlying the psy-

chic conflict causing somatic symptoms in the so-called neurasthenic patient.

5. Each neurasthenic patient presents an individual problem which must be studied as such; and treatment governed by the particular nature of the problem.

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DISCUSSION—*By Dr. Ned R. Smith*, Tulsa:

"One swallow does not make a spring." The fact that these two internists have apparently got religion and become converted to a proper method of approach and study of the neurotic patient proves, if nothing more, that there is still plenty of room for more of you to adapt their point of view. At least it is a start in the right direction. If you will take the trouble to carefully read Dr. Shepard's paper and thoughtfully study it you will find that it is absolutely incontrovertible from every angle. It simply boils down to the fact that he has very frankly recognized the psycho-genic element in diseases, that he is willing to face it and make every honest effort to understand the neurasthenic patient. That is the first step. The logical next step would be to treat them along appropriate psycho-therapeutic lines. Such neurasthenic patients are in every physician's office every day and as a practical matter it would be wholly impossible for them to be handled entirely by the psychiatric specialist. The technic of psychotherapy sufficient for the average case, if one cares to put in the necessary time, is easily within the reach of any physician who cares to develop it. In my opinion this point of view on the part of the essayists represents a distinctly constructive step in the right direction. More wide spread practices by medical men will tend to restore us to the proper plane of dignity and usefulness to the neurotic patient and keep them in our offices instead of making up the clientele of the irregulars. It is all very logical. First understand them, then apply the right psychological methods and many can be helped. One must temper his enthusiasm by the requirements that a certain small proportion represents incurable congenital psychopathic states.

CLINICAL CIRCULATORY EFFECTS OF DINITROPHENOL

A. B. Stockton and W. C. Cutting, San Francisco (Journal A. M. A., Sept. 22, 1934), investigated the effects of dinitrophenol on the circulation in thirteen patients with apparently normal cardiovascular systems. Six of the group were placed at bed rest in the hospital, and control observations of blood pressure, pulse rate, vital capacity and venous pressure were made regularly at 8 a. m., 2 p. m. and 7 p. m. The control period was continued until at least three consecutive results were in close agreement. A quantity of 300 mg. of sodium dinitrophenol was administered orally in three divided doses each day, and the circulation and vital capacity were observed for from four to twelve days. The ambulatory patients were treated in a similar manner, except that the same functions were observed once daily at 4 p. m. Before the observations were made, the patient was required to rest in a prone position without pillows for one hour. Vital capacity and systolic and diastolic blood pressure were not significantly affected by the sodium dinitrophenol. Definite increases in venous pressure and in pulse rate occurred in ten of the thirteen cases studied. These increases showed much fluctuation. The concurrent increases in pulse rate and venous pressure explained the maintenance of normal blood pressure in spite of the marked peripheral vasodilatation resulting from the dinitrophenol. Despite the variability in all observations, it was quite evident that, while no significant changes occurred in blood pressure and in vital capacity, there were definite increases in pulse rate and in venous pressure.

NONALCOHOLIC CIRRHOSIS OF THE LIVER IN THE LEBANON AND SYRIA

According to H. A. Yenikomshian, Beirut, Libanese Republic (Syria) (Journal A. M. A., Sept. 1, 1934), cirrhosis of the liver is of frequent occurrence in Syria and the Lebanon. It is more common in the rural population than in the dwellers in cities. It is particularly frequent in the farm laborers in one district near Sidon and Tyre. Alcohol is not used by these people and they do not use condiments excessively; syphilis is uncommon, but malaria, dysentery and infestation with intestinal parasites are prevalent. The cirrhosis is seen in comparatively young people, 63 per cent of the patients being younger than forty years. The proportion of female patients with the condition is larger in Syria than in America. Enlargement of the spleen is marked and often precedes signs of liver insufficiency. The liver often remains enlarged and coarsely hobnailed. Malaria and amebic dysentery (and especially the combination of the two) seem to be the primary causes of cirrhosis of the liver in Syria and the Lebanon.

RHABDOMYOMA

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OKLAHOMA CITY

Rhabdomyoma, or myoma striocellular, is a tumor containing more or less striped muscle-fibers. In these tumors, which are characterized by their rare occurrence, embryonal type, and appearance in young persons and children, occurring in such positions as the heart wall, bladder, vagina, kidney, and esophagus, the tissue frequently contains cells of various kinds, among which there are found straited muscle-fibers. It seems to be rare to find a whole tumor made up of muscle-fibers, and the admixture is often with such elements as cartilage, loose cellular connective-tissue, and even epithelial structures. The suspicion is, therefore, aroused that rhabdomyomata are closely related to the mixed tumors or teratomata.

In form they appear as single or multiple, nodular or voluminous, flat or rounded, circumscribed or diffuse and even polypoid growths. They are usually soft and grayish on section, and markings produced by muscle bundles alternate with abundant connective-tissue stroma. Very cellular forms are more opaque, yellowish or reddish, soft and often diffuse.

The structure of rhabdomyoma presents chiefly a system of parallel bundles of intertwining strands of striped muscle-fibers, supported by adult or embryonal connective-tissue. The fibers may encircle blood-vessels or other structures but are more often diffuse. The microscopic appearance is usually that of a spindle-celled sarcoma containing more or less striated muscle-fibers. The cells are usually thin and much elongated and are rarely branched. Both long and cross striations may be pronounced or the cross striation may be present in a part of the cell only or be entirely missing in embryonal and spindle-shaped cells which still retain longitudinal fibrillation. Or the cells may resemble smooth muscle-cells. The ends of the fibers may be swollen, rounded, and contain multiple nuclei. In the more embryonal types they may lose their acidophile character and all resemblance to muscle-cells. Large areas of the tumor may contain no muscle-fiber at all while certain areas are richly supplied. Adenomatous elements are not rarely associated. The protoplasm is not only longitudinally striated but shows distinct cross and transverse striations. The rhabdomyomata usually have an abundant content of glycogen which is evidence of their embryonal character.

The nuclei follow a type of large vesicular chromatic bodies, single or multiple, which lie in a central area of grandular cytoplasm. Or they may project from the cell border like nuclei of sarcolemma. A definite sarcolemma is wanting, but traces of such a structure with its nuclei have been seen in rare cases. The stroma is either loose adult connective, or embryonal, sarcomatous or myxosarcomatous, and the teratomatous contain bone, cartilage and various other tissue. Blood vessels are usually abundant and sometimes, as in a large polypoid vaginal tumor they are over-developed.

The course of rhabdomyoma is usually progressive and in the sarcomatous and teratoid forms it is rapid. The more adult types may become encapsulated or assume the polypoid forms, but the embryonal tumors infiltrate surrounding tissue, multiplying muscle-cells being often preceded by a zone of proliferating connective-tissue.

Degenerative changes, glycogenic, hyaline or amyloid may occur without interfering with the growth. The malignant tumors of the kidney and testis reach large dimensions and produce metastases and cachexia, but the metastases are usually derived from other elements of the tumor. These tumors are malignant in proportion as the sarcomatous element is predominant.

CLINICAL FORMS OF RHABDOMYOMA

The kidney is the commonest seat of tumors of this type. Here the tumors are large, rounded or irregular masses, more or less encapsulated.

In the urinary bladder polypoid rhabdomyomas have been described as polypoid masses hanging down into the bladder.

Rhabdomyoma uteri appears almost ex-

clusively as an element in the polypoid vagina, sarcoma of children and adults. This process affects the vagina of children and chiefly the cervix in adults. It may exist at birth and appear as a rather broad thickening submucosa which soon becomes polypoid. The symptoms are hemorrhage, fetid discharge, and protrusion of a polypoid tumor from the vagina, with dysuria, pain, fever, and cachexia. The vagina is eventually filled with ulcerating masses and there are bulky extensions into the pelvis, and occasionally to regional lymph-nodes, rarely to the skin or lung. The usual histology is that of a large spindle-shaped cell sarcoma with many blood and lymph-vessels, myxomatous tendencies, and areas of striated muscles.

In the testis rhabdomyoma occurs in the form of a nodular tumor as large as a walnut or a child's head. They may replace the entire organ or displace it to one side, or be found outside the tunica albuginea. In several cases the muscle-tissue was associated with epithelial structures, and one case was combined with carcinoma and sarcoma.

Congenital rhabdomyoma of the heart is a very characteristic condition. They occur as multiple sharply circumscribed areas or tumors, lying within the wall or projecting internally or externally. Ponfick pointed out that they are associated with diffuse sclerosis of the cerebral cortex and with disturbances of nutrition.

CASE REPORT

Mrs. M. B., age 66, patient of Dr. Louis Ritzhaupt of Guthrie. Personal history essentially negative. Usual diseases of childhood. Good recoveries. Patient has been ailing for past three years, but no definite diagnosis made. In March of this year patient had a rather severe hemorrhage from the urinary tract which so weakened her that she was in bed two or three weeks. The exact origin of this blood was not fixed although it was thought to come from the bladder. About five weeks ago patient began to feel badly again. At times was nauseated with occasional vomiting of bile-colored material. Has been in bed three weeks because of loss of strength and weight. Pain on urination which is quite severe at times. Has had nearly continuous hematuria. Pain over bladder and in region of the liver.

Physical examination: All was essentially negative except tenderness over bladder region and herpes on hips with few small shallow ulcers on tongue. Pelvic examination showed a hard mass in the anterior vaginal wall extending backward towards the cervix which was painful on pressure.

White blood count 18,200 with 85% polys, hemoglobin 60%, red blood count 3,000,000. Urine showed albumin 4 plus, a few red blood cells and pus cells on microscopic examination.

Cystocopic examination showed a mass anterior to the trigone pushing the floor of the bladder up from below. This mass extended up along the ureters on both sides and was thought to be outside the bladder wall. There was a small diverticulum on the left side which appeared to have an ulcer-like area about three-fourths of an inch in diameter along one edge. The surface of this, however, did not bleed when touched. The appearance of this mass from within the bladder and the feel of the mass from vaginal examination gave the doctor the impression that the condition was one of inflammatory origin.

The patient died very suddenly a few hours after the cystoscopic examination. A post-mortem examination showed all organs essentially normal except a moderate peri-splenitis of the spleen and a thickened floor of the bladder. There was no distinct tumor mass found. Microscopic examination of this thickened bladder wall showed it to be a rhabdomyoma, being composed of bundles of striated muscle-fibers with considerable interstitial fibrous tissue.

From Wesley Hospital Laboratory.

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THE ADEQUACY OF TREATMENT IN CONTROL OF SYPHILIS

Udo J. Wile, Ann Arbor, Mich. (Journal A. M. A., Sept. 1, 1934), discusses the adequacy of modern methods of treatment in preventing the late sequelae of syphilis. Among all the advances in treatment, one thing stands out as an axiom unchanged through centuries; that the background, the understructure on which all treatment must be laid down, is the continuous use of a heavy metal. With all the kaleidoscopic changes that have occurred in the management of syphilis, the continuous use of mercury and more latterly bismuth has been the most constant factor, and round this the modern syphilologist, until something better appears, must build his attack. Looking back over the development of methods of treatment and changes in drugs used, it may safely be said that what is now set forth as adequate or as the best treatment today may well be discarded in the not distant future, as have older methods in favor of those in use today. The last word in the treatment of syphilis is still unspoken, and the ultimate solution and the successful search for a cure comparable to that which exists for certain other infections is something to be attained in the very remote future. The treatment of syphilis is still in a state of constant flux. The happy results achieved during the last three decades as a result of the pooled experience of observers in different parts of the country, and as a result of newer methods involving not only new drugs and new procedures but also greater refinement in early diagnosis, lead to the conviction that the next few decades will see, if not the last word, at least equally great progress in the treatment of already infected patients. The prevention of syphilis from the public health standpoint is a major problem deserving of the greatest effort on the part of the agencies concerned with the prevention of diseases.

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EDITORIAL

OKLAHOMA CITY FALL CLINICAL SOCIETY

The meeting of the Oklahoma City Clinical Society recently held was in every way a most decided success. More than 600 were registered from Oklahoma and neighboring states. The faculty, as usual, was composed of the outstanding scientific authorities of this country, and brought to the medical profession of this section a great deal of valuable information. The post graduate courses conducted by the doctors of Oklahoma City were well attended and very interesting and it was again demonstrated that within our own membership is found some of the very best teaching talent.

The excellent fellowship which prevails at these meetings should not go unmentioned. This wonderful fraternal spirit is strengthened and developed by these meetings of the medical profession. The Journal wishes to congratulate the doctors of Oklahoma City upon this most excellent program, knowing that all who attended appreciate this opportunity and advise all who did not attend this fall to begin now to make arrangements to attend the next annual meeting.

APPENDICITIS MORTALITY

Much has been written recently in our leading medical and surgical journals relative to the mortality rate in appendicitis with appeal to the profession to use every available effort to lower this all too high rate. Definite action has been taken by the Pennsylvania State Medical Association to bring this matter to the attention of not only the surgeons but all members. A committee was appointed at their last annual meeting to draft definite plans to bring this information not only to the profession but to the laity. This committee requested that the Board of Trustees authorize the expenditure of $100 or less for a page of warning stickers to be included in an issue of their State Journal. These stickers would be used by the profession to be placed upon statements and other correspondence going to their clientele. Four hundred thousand such stickers were sent to eight thousand physicians in the state. It was further suggested that the Councilor from each Council District be asked for time on their annual meeting program in order to present a paper on appendicitis mortality. That each member of the appendicitis committee prepare a short treatise on some phase of appendicitis to be presented before county medical societies, and that such county societies have a scientific program on appendicitis during the year.

It was also suggested that health talks be made to high school students and before civic clubs and that appropriate newspaper publicity be carried out.

It would appear that this is a step in the right direction and that some well formulated effort might well be outlined by the Oklahoma State Medical Association along this line. Such a move should, and I believe will, receive the hearty cooperation of the medical profession throughout the state and would result in lowering both the morbidity and mortality rates from this very prevalent and rather poorly treated disease.

SUMMARY OF COMPULSORY SICKNESS INSURANCE PLAN IN GERMANY, GREAT BRITAIN AND FRANCE

As can be seen from the heading, this report encompasses the entire life cycle of sickness insurance from its earliest inception, at least on a national scale, in Germany, since 1883; then goes over to that

of England which came into being in 1911; then that of France, one of the most recent plans put into execution, in 1930; and finally a plan that is only being contemplated, namely, the Michigan State Medical Society plan.

On studying the problem from this kind of perspective one covers the development of sickness insurance over the span of half a century. It gives one an opportunity to see the workings of each plan separately, or what is more important, that of the whole; hence, we believe, the value of this type of approach.

It is natural to expect that in such a series of developments each new plan would be an improvement over the others, that the newer plan would attempt to avoid the pitfalls and mistakes of the previous one; but, unfortunately, this is not altogether the true state of affairs. True, some of the newer plans have many excellent new features to overcome defects that cropped up in the earlier plans, yet some of them repeat the mistakes of the previous plans. A case in point is the Michigan plan, one not as yet put into practice, and still they make the cardinal mistake of expecting to put over such a comprehensive plan, offering an almost complete health service on a voluntary basis. It is one thing upon which all authorities on this subject agree, it is that the only successful way of putting over a National or State Health Insurance plan is to use the compulsive insurance principle. Simons and Sinai', both well known authorities on the subject and at least sympathetic to the cause, make the following statement regarding compulsion: "No voluntary system has ever succeeded in collecting sufficient premiums from the underpaid classes most in need of its services to give anything near adequate relief and sickness care."

It is not to be denied that there are countries that develop fairly large insurance schemes on a voluntary basis, notably among them, Denmark and Sweden; but in general it was found that the success of the scheme is greater the greater the operation of the compulsion principle in the plan.

It must be admitted that the early origin of health insurance is more or less due to a spontaneous demand on the part of people of poor means, and extends back a long time before any insurance plan, even that of Germany, came into operation.

In order to examine adequately the question of sickness insurance it is necessary to have a proper definition of what is meant by sickness insurance. The best definition we came across is that given in the Michigan State Society Report under "Conclusions and Recommendations." It is as follows: "Health Insurance," (these terms interchangeable—M. H. W.), "may be defined simply as a project to equalize the burden of costs arising through illness. It attempts to level this burden by attaching a definite meaning to average costs so that averages will constitute the exact costs to a family or individual, rather than conceal extremes of high or low costs."

1. In this definition, then, we find one of the most essential and valid reasons for insurance, namely, the distribution of the risk.

2. Another, and the most important reason is the heavy burden of so-called "catastrophic diseases." There is no doubt that real serious disease or prolonged illness consitutes an unbearable burden to any group, let alone the low-earning groups. This is a moral issue which cannot be sidestepped, and, we believe, must be met by the medical profession honestly and in a spirit of cooperation to the fullest extent. It must be admitted that the advances of social insurance are on solid ground in their claim that the individual physician is unable to cope with the problem, and collective effort on the part of all elements of the community is essential in meeting this problem.

However, when we have conceded these two premises—in reality but one premise —we have covered all the essential points, i. e., distribution of visits and "catastrophic illness." None of the other reasons advanced in favor of sickness insurance is, to our mind, valid, and there is very good reason to doubt even the sincerity of their advocates, although, if we choose to be charitable, we may say that they are the result of mere sentimentality, superficial thinking, and are a product of half-baked knowledge of the subject—of medical service—as it exists—at hand.

The other reasons advanced, to enumerate but a few, are:

1. That the greater part of the poorer classes is unable to get medical service. Some of the advocates of sickness insurance put the percentage as high as 67 per cent of the population (Rankin)[2]. He does not say it in so many words, but since the upper earning limit advocated for compulsory insurable persons is $1500, and according to Rankin's quoting of Leo Wol-

man there are 67 per cent of families whose annual income is under $1450, the implication is quite clear that all these people should be insured. This, of course, is unthinkable. The statistics of hospitals and dispensaries in this country attest to the fact that this is not the case.

2. That the health of the people would be immeasurably improved because of everyone having, so to say, free access to medical service.

3. That preventive medicine will be greatly developed, checking the prevalency of such conditions as cardiac disease, nephritic disease, cancer, etc.

4. That the individual doctor falls far short in his ability to handle modern practice because he cannot avail himself of modern diagnostic methods, such as roentgenray, laboratory service, etc., and that socialized medicine will bring all these boons to suffering humanity.

In face of such ponderous argumentation, one cannot help but ask the question: Have all these things happened in those countries that have been blessed with such insurance?.

(a) Is the health of the people any better?

(b) Is mortality lessened?

(c) Is preventive work advanced any more than it is in, say, these backward (talking from insurance standpoint only) United States, which have not as yet gathered unto themselves all these blessings?

(d) Does medical service given in the United States suffer by comparison with that in any of the countries which do have sickness insurance?

It is best to turn to the very people who urge this plan for testimony on these points. What do they say on these very subjects?

The International Labor Office Compulsory Sickness Insurance Report, according to even Simons and Sinai[1] is a biased report, as can be seen from this quotation: "The International Labor Office is by no means an impartial observer. It has been instructed by a vote of an overwhelming majority of its constituent nations actively to propagandize for compulsory health insurance. (Report of the tenth session of the International Labor Conference, May, 1927). It is useless, therefore, to search in the publications of the Bureau for the defects of insurance." But even in this biased report it is admitted that the number of sickness days per population has doubled in countries with compulsory insurance laws.

Again quoting from Simons and Sinai[1]: "Contrary to all predictions the most startling fact about the vital statistics of insurance countries is the steady and fairly rapid rate of increase in the number of days the average person is sick annually, and the continuously increasing duration of such sickness. Various studies in the United States seem to show that the average recorded sickness per individual is from 7 to 9 days per year. It is nearly twice that amount among the insured population of Great Britain and Germany, having practically doubled in both countries since the installation of insurance." While it is being argued that this is more apparent than real, yet they at least must admit that there was no improvement under health insurance.

Similarly, when these authors speak of preventive medicine (page 9) they say:

"Naturally the best selling points of this service are stressed. These are the things which each fund has developed to show its superiority over its competitors. Regular medical service, being practically identical in all cases, is never so emphasized. Hospitals, convalescent homes, vacation camps, baths, cures, clinics, and any preventive work that may be done are described in glowing terms, and usually illustrated.

"This is perhaps one of the reasons for a very general acceptance for the claim that provisions for general health care are more efficient under insurance than in the United States. German physicians and insurance officials repeatedly stated as an accepted and undisputed fact that everything done by American Health Departments was done as a matter of routine, in Germany through insurance and general health administration. Only a most casual inspection was necessary to show that in many such fundamental matters as care of milk supply, supervision of the display and sale of food, etc., conditions existed almost everywhere that would be tolerated only in the most backward American localities."

The same authorities, Simon and Sinai[1], make a most remarkable admission when they state (page 16) that: "Social insurance is always a result of low wages," and again in the same paragraph: "That the whole social insurance problem is, at bottom, one of low wages must be recognized as a basic fact. Adequate wages would immediately shift the responsibility of

meeting such emergencies from society to individual." Later in the same discussion the same author says: "In spite of the name and all that may be said to the contrary, the dominant motive in the establishment of every system of health or sickness insurance is the *Relief of Poverty, not the Preservation of Public Health.*" (To be continued in the December Journal).

REFERENCES

1. Simons, A. M., and Sinai, Nathan: The Way of Health Insurance. The University of Chicago Press.
2. Rankin, S. W., Am. J. Pub. Health, 19:359-65, April, 1929.
3. Simons and Sinai, loc. cit. p. 12.
4. Simons and Sinai, loc. cit. p. 157

Editorial Notes—Personal and General

WE ARE pleased to note the appointment of Dr. John L. Day, as Superintendent of the Hospital at Supply, to succeed the late Dr. J. W. McClendon. The State is fortunate indeed to have the services of so competent a man, having shown his outstanding ability while connected with the State Institution at Norman. We wish to congratulate the Board of Affairs on their excellent selection and predict a most competent administration.

DR. D. W. GRIFFIN, Norman, completed his 35th year of service as superintendent of the Central State Hospital October 8th, 1934. Coming to Norman in 1899 Dr. Griffin became assistant physician at the then privately owned institution. In 1910 he became superintendent of the hospital, a position he retained after the State bought the institution in 1915.

Dr. Griffin is believed to be the oldest state official from point of service and has seen more years of medical service with one institution than any other physician in the southwest. He is professor of mental and nervous diseases in the University School of Medicine and is one of the foremost psychiatrists in the southwest. He is an honorary member of the Oklahoma Academy of Medicine.

Dr. Griffin was born in Caldwell county, N. C., in 1873. He took his academic training in Chapel Hill College, Va., and graduated from the University School of Medicine, Richmond, Va.

Members of the hospital staff and a number of old friends gathered at his home October 8th for an informal surprise reception.

DR. ELLIS LAMB, Clinton, is reported improving after an operation for a sinus condition.

DR. W. F. HAYS, Claremore, who has been ill for the past few weeks, is reported improved.

DR. W. PAT FITE, Muskogee, has been named as medical examiner for the federal air commerce bureau.

DR. J. HUTCHINGS WHITE, Muskogee, attended the Southeastern Clinical Society, Kansas City, in September.

DR. G. E. JOHNSON, Ardmore, spent several weeks in October at the Mayo Clinic, taking post-graduate work.

DR. P. H. ANDERSON, Anadarko, is reported suffering from injuries received when he was thrown from his horse.

DR. W. ALBERT COOK, Tulsa, attended the meeting of the American College of Surgeons held in Boston, in October.

DR. and MRS. C. M. HODGSON, Kingfisher, have returned from New York where Dr. Hodgson has been doing post-graduate work.

DR. E. M. GULLATT, Ada, is spending a month at Washington University, taking a post-graduate course in children's diseases and orthopedics.

DR. J. R. HINSHAW, Clinton, spent several weeks in Rochester at the Mayo Clinic in October, doing special work in surgery and medicine.

DRS. EDMOND S. FERGUSON and WILLIAM L. BONHAM, Oklahoma City, attended a meeting of the American College of Surgeons, held in Boston.

DOCTORS J. A. MOFFITT AND GEORGE S. MECHLING, Oklahoma City, attended a meeting of the Congress of Anesthetists in Boston in October.

DR. A. A. WALKER, Wewoka, spoke at a cancer clinic held in Seminole in October. Drs. L. J. Starry, E. S. Lain and Wendell Long, all of Oklahoma City, were also speakers.

DRS. E. GORDON FERGUSON and L. CHESTER McHENRY, and J. C. McHENRY, Oklahoma City, have returned from the meeting of the American Academy of Ophthalmology and Otolaryngology, held in Chicago.

DR. BRUNEL D. FARIS, who has spent the past six months doing post graduate work in obstetrics, at Northwestern University and Wesley Memorial Hospital, Chicago, has returned to Oklahoma City and is located at 1217 Medical Arts Building.

News of the County Medical Societies

WOODWARD COUNTY MEDICAL SOCIETY held their regular bi-monthly meeting at the Baker hotel, Woodward, in October, with a dinner at which about forty physicians and dentists and their wives were entertained. Dr. W. C. Tisdal, read a paper on "Pre-Natal Care," after which there was a round table discussion.

At their next meeting, December 11th, at Woodward, there will be motion pictures on "Mid-Wifery."

DR. P. M. McNEIL, Oklahoma City, discussed "Treatment of Pneumonia and Its Complications," at a special meeting of the Cleveland County Medical Society held at the Central State Hospital, Norman, October 18th.

DR. R. Q. GOODWIN, Oklahoma City, spoke on "Pulmonary or Lung Abscesses," with lantern slide illustrations, at a meeting of the Pittsburg County Medical Society, October 18th.

DOCTOR JOHN WATSON CREWS

Dr. J. W. Crews, age 70, prominent physician of Atwood, died October 4th, following a brief illness from pneumonia. He is survived by his widow, seven daughters and a son.

Dr. Crews was born August 18, 1865, in Murfreesboro, Tennessee; graduated from the Hermitage Academy in Christiana, Tennessee in 1889. Dr. Crews practiced medicine in Fosterville, Tennessee, until coming to Oklahoma in 1895, and practiced in Pontotoc, Pittsburg, Atoka and Hughes counties.

Interment at Atwood.

DOCTOR JAMES WESLEY McCLENDON

Dr. J. W. McClendon, superintendent of the Western Oklahoma Hospital at Supply, passed away at 4:15 o'clock Wednesday morning, October 3rd, at his home, 400 East Creek. Death was very unexpected.

He was born in Louisiana in 1868, from which state he moved to Texas, before locating in Indian Territory. Dr. McClendon retired from active practice to engage in various commercial enterprises, which occupied his time for about twenty years; reentered practice at Earlsboro in 1929 and remained at this location until he was appointed by Governor Murray as superintendent at Supplv.

Interment at Atoka.

DOCTOR NEWTON HARVEW LINDSEY

It is with deep regret that the Journal announces the death of Dr. Newton Harvey Lindsey of Pauls Valley, who for many years has been an active and valued member of the Oklahoma State Medical Association.

Dr. Lindsey was born July 13, 1870, died October 24, 1934.

During his residence at Pauls Valley he has been actively identified with the Garvin County Medical Society, having been president and at various times a member of the House of Delegates of the Oklahoma State Medical Association—having served on various committees of this organization. For many years Dr. Lindsey has been engaged in the practice of surgery, giving the practice his undivided attention.

Dr. Lindsey held membership in the Garvin County Medical Society, Oklahoma State Medical Society, American Medical Association, and a fellow of the American College of Surgeons.

Funeral services were held at the Presbyterian Church, Pauls Valley, Thursday, October 25th, with his pastor, Reversnd W. T. Reynolds, officiating.

DR. W. J. WALLACE

In dark seas where the whirlpool rages,
Stands the eternal Rock of Ages.

Then Tiens ta Foi through the bitter strife!
O cling to the cross—through death to life!

It is with sorrow and grief that we record the passing of a man whose life was an inspiration to every student of medicine graduating from the Oklahoma University for the past twenty years. Transplanting himself from the heart of his native Cumberland Mountains to the expansive plains of Oklahoma, forcing himself upward from a condition of poverty and obscurity into a life of splendid professional and financial success, leaving behind him everywhere a host of warm personal friends, this man came and labored among us and passed on to face his Maker with an achievement to his credit which few men have equaled.

Dr. W. J. Wallace was born in 1874 on a farm near a village in Mississippi. He finished the local schools at that point and entered business, being part proprietor of a small store at Kosciusko, Mississippi. Here he had as a partner, Mr. Hugh Johnson, one of the shrewdest business men who has ever guided the destinies of finance in the state of Oklahoma. After a year or so of this, Dr. Wallace sold his interest for sufficient profit to enable him to matriculate as a medical sudent and continue until graduation in the University of the South at Sewanee, Tennessee. He was a good student and finished with honors, following which he took a year's internship in the Grady Hospital in Atlanta and came west. Here he located in Chandler, Oklahoma, where he conducted a large general practice until 1906, at which time he stopped, went to Tulane University and from there to New York City, where he received training in the specialty of urology. Before resuming practice he spent some time in European study and finally opened an office in 1911 in Oklahoma City, where he practiced until his death.

Dr. Wallace was honored by his profession and was Professor of Urology in the University of Oklahoma Medical Department. He was a past president of the Oklahoma County Medical Society and of the Southwestern Branch of the American Urological Society. He was a very faithful member of the various medical bodies related to his work.

His personality was such as to attract and hold the warm friendship of men in all walks of life. His business sagacity was uncanny and resulted in the accumulation of a considerable fortune. He was an extremely busy man, who played little, but who threw his heart and soul into professional duties, taking time out only for an occasional trip out of town to a medical meeting, from which he hurried back to his patients.

Dr. Wallace was a clean, Christian man, who faced death secure in the faith that his journey across the valley of Death would be attended by the loving care of a personal Savior. Auf Wiedersehen, our friend and leader.

(As presented by Dr. Basil A. Hayes, Oklahoma County Medical Society).

ABSTRACTS • REVIEWS • COMMENTS AND CORRESPONDENCE

INTERNAL MEDICINE

Edited by L. J. Moorman, M.D., 1200 N. Walker, Oklahoma City; C. E. Bradley, M.D., Medical Arts Building, Tulsa; Hugh Jeter, M.D., 1200 N Walker, Oklahoma City

By C. E. BRADLEY, M.D.

Cough—Some Problems in Therapy. Oscar W. Bethea, M.D., Professor Clinical Medicine, Tulane. "International Medical Digest," September, 1934, Page 178.

Cough is a symptom and not a disease. It should not always be suppressed as it may be nature's method of removing secretions that would be a disadvantage to the patient. It may be more desirable to modify the cough than to suppress it entirely.

A general examination, including laboratory work and if necessary x-ray studies together with complete and careful family and personal histories, should be made in all cases.

The treatment is best directed against the causative factor. Cabot found the most frequent cause of cough was heart disease, next tuberculosis, and third tonsillitis. Allergic coughs which may or may not be associated with hay fever and asthma should be treated by elimination of the causative factor. Bronchiectasis and chronic bronchitis are responsible for persistent and disturbing types of coughs. Autogenous vaccine, lipiodal by instillation, and one of the iodides by mouth help in these conditions.

The common cold is responsible for a large percentage of coughs. Here direct therapy is indicated. Measures to build up the resistance of the patient, such as cod liver oil, general care, and vaccines should be instituted.

Sinusitis may cause coughs and should be treated locally. Nervous instability is often a cause of persistent cough. Here the bromides are of value.

Quiet in the cumbent position will reduce coughing to one-half. Restriction of exercise, avoidance of fatigue and dyspnoea are of great value. Good fresh air is of great help, but drafts should be avoided and the body should not be allowed to be chilled. Dietetic measures include warm drinks and food and lots of milk and fruit juices. Foods rich in vitamin A have their value. Inhalations of benzoin are often helpful. Sprays are frequently employed with local help. Expectorants, though of value, often cause inpairment of the appetite and digestion with the production of nausea.

Sollmann classifies the expectorants as follows:

(a) Against dry congestion: syrup ipecac; tartar emetic.

(b) Against thick secretion: ammonium chloride; potassium iodide.

(c) Against excessive thin secretions: terpin hydrate.

(d) Against imitation: codeine, and alkaline gargles.

Conclusions

1. As cough is a symptom the etiological factor should be sought.

2. Attention to the cause is the most important consideration in therapy.

3. It is better to modify a cough than to suppress.

4. In selecting an expectorant, physiology, pathology, and pharmacology must all be drawn upon for assistance.

Some Aspects of Tuberculosis Meningitis and the Possibility of Its Prevention. Prof. Dr. Arvid Walgren, Gothenburg, Sweden. "The Journal of Pediatrics, September, 1934, Vol. V, No. 3, Pages 219-298.

Without a doubt, tuberculosis meningitis is the most fatal of all children's diseases. Since it is a common one, against which we are entirely powerless, our only hope is in the development of preventive measures.

An analysis of 166 autopsied cases and 39 x-rayed cases shows that with very few exceptions tuberculosis meningitis develops as a complication to fresh primary tuberculosis, and that as soon as encapsulation and calcification begin, the risk of meningitis is greatly diminished.

Statistics compiled by a Hungarian physician, Orocz, and the author show that the child runs the greatest risk of getting meningitis between the fourth and eighth week after the appearance of tuberculin sensitivity. After three manths have passed, the danger of meningitis is considerably less.

Of course the first problem is the early diagnosis of primary tuberculosis. This is difficult because of the atypical symptoms of the disease. The most consistent symptom is the entirely uncharacteristic fever, which is no different from that caused by commonplace infections. The only possible way to avoid overlooking primary tuberculosis is to make tuberculin tests in all acute febrile conditions, especially those not clearly diagnosable. X-ray examination should follow all positive tuberculin tests.

We prescribe sanitorium treatment. The children should be kept in bed as long as the fever persists and as long as the blood sedimentation rate is accelerated. Then they may be allowed a gradually increasing length of time up and exercise in the outdoors.

This treatment is not too rigorous when we remember that tuberculosis meningitis occurs only in those children who have not received treatment for primary tuberculosis.

It is usually impossible to determine from the history when the child developed primary tuberculosis except in one condition, the appearance of erythema. This syndrome is usually of tubercular origin and develops at the same time as tuberculin sensitivity. Of 429 children treated as outlined above for erythema nodosum and primary tuberculosis only three contracted meningitis.

There is greater danger of contracting meningitis

in the early spring and in August, while the younger the child the greater the risk of meningitis. The age curve from the Gothenburg hospital for the last six years shows that meningitis really can be to a certain extent prevented by rational anti-infection prophylaxis. Hence it is up to us to protect children, especially those under three years of age, during the first four months of the year against infection.

A Statistical Analysis of Whooping Cough Cases. John A. Toomey, M.D., Cleveland, Ohio. "The Journal of Pediatrics," September, 1934, Vol. V, No. 3, Pages 322-329.

An analysis of 112 cases of whooping cough in the contagious department of the Cleveland City Hospital from 1921-1932, inclusive, showed that 88% of the cases were children under six years of age. Of the 14.9% that died, 86.7% were children under three years of age. Fifty-six of the seventy-nine deaths in children under one year of age were caused by bronchopneumonia which shows that the disease is particularly dangerous in children in the first year of life. A few more females than males were observed. The highest death rate was for the month of July when it was 30.1%.

The death rate of the Cleveland Hospital was less than that of Glasgow Hospital, Edinburgh City Hospital, and Berlin. It was 1.9% more than that of the department of pediatrics in the Western Reserve University City Hospital; a great deal more than that of Geneva, Lausanne, and slightly more than that of Paris.

In Cleveland there is a decided increase in the number of cases from the third to the eighth month of the year. In Massachusetts, New York, Ohio, Minnesota, and Wisconsin the greatest mortality occurs in February, March, April and May, with a rebound in August; while in Alabama, Florida, Louisiana, and Georgia it rises slowly in March and reaches a peak in July.

Statistics show that 35-50% of the deaths from whooping cough occur in children during the first two years of life. The author says, "Even though there is a high mortality rate in infancy it has been my clinical experience as well as that of others that well-fed, healthy, and sturdy infants in good surroundings actually may have few or no symptoms. Social conditions, such as poverty and ination, create predisposing factors whose effect on the patient's general physical well-being may militate against his recovery. This is well illustrated by the fact that 35 out of 92 rachitic children and 10 out of 14 spasmophilic children died, accounting for 45 of the 166 deaths in our series of whooping cough cases." The severity of bronchopneumonia, which accounted for 122 of 250 cases, as a complication must not be overlooked.

The author reports practically no sequelae following the recovery of the cases in Cleveland, although two cases did die of pulmonary tuberculosis six months after they had pertussis; he also believes that asthma occurs as an aftermath more often than this series of cases would indicate.

The Diagnosis and Treatment of Pulmonary Abscess in Children. David T. Smith, M.D., Durham, North Carolina. "J.A.M.A., September 29, 1934, Vol. CI, No. 13, Page 971.

The incidence of pulmonary abscess in children has been greatly underestimated by available literature. Multiple embolic abscesses occurring with septicemia will not be considered here because they are believed to be an integral part of the septic disease.

An analysis of 45 cases of pulmonary abscess for predisposing causes showed that half of the cases followed pneumonia, a fourth followed tonsillectomy, one followed aspiration of a foreign body, one followed exposure, and one followed the aspiration of a membrane in a case of Vincent's angina.

The infecting material may reach the lung directly by a penetrating wound, it may drain through the lymphatics, it may enter through the blood stream as an embolus, or it may be aspirated. In the cases studied there was no evidence that the material entered by either of the first two routes. Cutler and his co-workers believe that most if not all abscesses following operation are embolic in origin; and it cannot be denied that a large per cent follow aspiration, sometimes while the patient is under an anesthetic. It has been demonstrated that 76-78% of the patients have blood below the vocal cords after tonsillectomy.

As in adults, pulmonary abscesses in children may be classified as: (1) bacterial abscess; (2) fusospirochetal abscess; (3) fungous abscess. There has been much discussion regarding the first two terms. Some contend that abscess should be reserved for the bacterial type, and that the second should be called fusospirochetal gangrene. So long as the identity of each is understood it really makes no difference.

(1) Bacterial Abscess: Although any bacterium which gains access to the lung may cause inflammation, only those containing proteolytic or necrotising enzymes such as streptococci, staphylococci, Friedlander's bacillus, B. pyocyaneus, influenza bacillus and members of the gas gangrene group of bacilli are capable of initiating abscess. The author believes that when complete bacteriological studies have been made in sufficient number of cases that at least 50% of the pulmonary abscesses in children will be due to staphylococci.

(2) Fusospirochetal Abscess: Since 1867 fusiform bacilli and spirochetes have been associated with certain pulmonary abscesses. In recent years experiments have shown consistently that fusiformirochetal material from sputum or tonsils of the patient will produce pulmonary abscess in experimental animals. Spirilli have been shown to be the important factor in the symbiosis since transmission from animal to animal is impossible when they are absent.

(3) Mycotic Abscess: Although few children with mycotic abscess have been observed, sporothrix and actinomycosis have been the etiological agents in those studied.

Diagnosis: Prognosis depends largely upon an early diagnosis and prompt specific treatment against the etiological agent. This is often difficult. A history of tonsillectomy or aspiration of a foreign body should put the physician on his guard for fusospirochetal abscess. A child with the clinical signs of pneumonia and a gingivitis or Vincent's of the tonsils may have fusospirochetal abscess of the lungs.

Since the history, psysical signs, and x-ray may be identical in cases of bacterial abscess, a bacteriological study of pulmonary secretions is essential. Sputum is difficult to get in children, so laryngeal swabbings, bronschoscopic drainage, and pleural tappings may be necessary. Exploration of the lung with a needle is dangerous as it may produce fatal empyema.

Treatment: The general supportive measures: rest, fluids, high-vitamin diet and postural drainage may be safely and beneficially applied in all cases of pulmonary abscess.

Polyvalent serum, antitoxins, and autogenous vaccines are beneficial in the treatment of abscesses

caused by organisms of the gas-gangrene group, staphylococci, and other bacteria, respectively. Postural drainage, and bronchoscopic drainage is indicated in the subacute stage. In chronic stage (duration of three months) open operation and drainage should be resorted to.

Arsenicals should be started within the first two weeks in fusospirochetal type of pulmonary abscess if the best results are to be obtained.

Potassium iodine in gradually increasing doses should be used in the treatment of the mycotic type of abscess, and vaccine therapy may be beneficial as a supplimentary treatment.

By HUGH JETER, M.D.

The Specificity of the Test for Alcohol in Body Fluids. H. A. Heise, Uniontown Hospital, Uniontown, Pennsylvania. American Journal of Clinical Pathology, Vol. IV, No. 11, Page 182.

The author refers to the work of Nicloux, Nowicka, Widmark, Southgate and Carter, Bogen, McNally and Embree and agrees with them in that the presence of alcohol furnishes the only constant finding in all cases of alcoholic intoxication. He also confirms the fact that the degree of intoxication fairly closely parallels the per cent of alcohol in the blood or urine regardless of tolerance, age, weight or food consumption.

It is pointed out that such a chemical examination is valuable in cases of coma, as a matter of differential diagnosis, as well as in cases of accidents and those of medico legal importance. A case was reported to illustrate, in which the diagnosis was uncertain. The urine examined revealed 0.42 per cent alcohol, the spinal fluid 0.38 per cent and consequent results proved alcoholism to be responsible for the alarming symptoms.

The technic of the test is given. It is said to be accurate within 0.01 per cent. Specimens can be preserved satisfactorily. Benzoic acid is a good preservative for urine and sodium flouride for blood. The author indicates that alcoholism plays a greater factor in auto accidents than statistics indicate.

The Medicolegal Necropsy. American Journal of Clinical Pathology, January, 1934, Vol. IV, No. 1.

This entire number of the Journal is devoted to the subject of medicolegal negropsy, 167 pages in all, in the form of a symposium, as follows: Introduction, Frederick E. Sandern, Chairman, Committee on Necropsies, American Society of Clinical Pathologists.

In this brief introduction generalizations are made in which the importance, history and problems are mentioned. The points of history are extremely interesting.

The Medicolegal System of the United States, Oscar T. Shultz, Director of Laboratories, St. Francis Hospital, Evanston, Illinois.

In this the author discusses the application of medicine to law, the coroner, the coroner's necropsy, the coroner's inquest; causes of the poor functioning of the coroner's office; is the coroner's office necessary; reform of the coroner's office; permission for necropsy; removal of organs at necropsy; and disposition of parts removed from the human body. This is an authoritative discussion of pertinent facts such as are of tremendous importance to every practicing physician, not only as a physician but as a citizen.

The Medicolegal Necropsy, Charles Norris, Chief Medical Examiner, New York City.

This is a general discussion of medicolegal necropsy emphasizing its importance in many types of instances. Many important suggestions are included. He closes with the following: "A well planned campaign to overcome the prejudice of the public to examination of the dead is necessary. The medical profession is somewhat responsible for the antagonistic attitude of the public. The contrast between our country and the central European countries is noticeable in this regard. To illustrate, all the professors who taught me during my post-graduate studies in Vienna were thoroughly examined after death."

Performing the Medicolegal Necropsy, A. V. St. George, Assistant Director of Laboratories, Dept. of Hospitals, City of New York.

This author classifies necropsies as follows:

1. Crimes of violence (shooting, strangulation, stabbing, infanticide, etc.).
2. Sex crimes (rape, etc.).
3. Poisonings (including homicidal, accidental, occupational).
4. Traumatic accidents (automobile injuries, falls, etc.).
5. Still-births, malformations, birth injuries.
6. Sudden (accidental) deaths.

An abundance of useful technical knowledge is presented.

Pathological Anatomy of Death by Drowning, Edward L. Miloslavich. From the Institute of Legal Medicine, Royal University, Zagreb, Jugoslavia.

Fundamental phenomena and points in differential diagnosis are discussed.

Toxicology in the Medicolegal Necropsy, Alexander O. Gettler, Toxicologist, Chief Medical Examiner's Office, New York City.

In this portion of the symposium, poison is defined; leads and clues are itemized; points in the post-mortem examination are stressed; necropsy material best adapted for analysis is discussed and technical points connected with the toxicological examinations are outlined. In addition, five interesting cases are briefly presented. "Alcohol the Cause of Accidents" is discussed. From the examination of 6,000 brains as well as spinal fluid this author concludes that contents above 0.25 per cent indicates intoxication.

Medical Examiners' Findings in Deaths From Shooting, Stabbing, Cutting and Axphyxia. Harrison S. Martland, Chief Medical Examiner for Essex County (Newark), New Jersey, and Associate Professor of Forensic Medicine, New York University, University and Bellevue Hospital Medical College, New York City.

This portion of the symposium consists of almost 100 pages of copiously illustrated, beautifully and clearly presented, facts covering the subject, in a masterful manner. Many valuable photographs and case records are presented. Statistics and other valuable material are recorded.

EYE, EAR, NOSE and THROAT

Edited by Marvin D. Henley, M.D.
911 Medical Arts Bldg., Tulsa

Visual Field Defects in Pregnancy. C. E. Finlay, M.D., Havana, Cuba. Archives of Ophthalmology, August, 1934.

This is a continuation of research work first reported in 1922. At that time findings of the visual fields of thirty-one cases of pregnancy were related. One hundred and eight additional cases are now reported with charts, illustrations, etc. A bitemporal contraction of the visual fields intensified in one or more quadrants was the finding in the majority of the cases. This is almost a constant occurrence in an uncomplicated pregnancy.

Some possible causes suggested for this phenomena are: hypophyseal enlargement of pregnancy, toxic influence due to endocrine disturbance or some other disorder, to a general reduction of retinal vitality due to endocrine insufficiency, to suggested influences or to other causes independent of the hypophyseal hypertrophy, which are not considered capable of producing this defect by pure mechanical action.

A Feree-Rand perimeter with an illumination of seven candle power was used for taking the visual fields. Patients were selected who did not have any constitutional disorders or otherwise active eye complications. The period of parturition chosen was during the last three months, except one. In addition some were examined before the above mentioned period and some were checked after delivery. The tests were conducted in a painstaking manner, care being exercised not to fatigue the patient.

In pregnancy there is a normal enlargement of the hypophysis and a subsequent pressure of the chiasm. The hypophysis at this time is regularly from two to three times its normal size. This even when not directly compressing the chiasm, may produce vascular changes of the nature of venous or arterial engorgement or anemia in and around the chiasm. Then a secondary edema and secondary changes in the nerve tissues may affect their conductivity. Twenty-six cases were re-examined after delivery and twenty cases showed normal or beginning to return to normal. In the others there is the possibility of a hypophyseal growth which was stimulated by pregnancy.

The ninth month of pregnancy showed the greatest increase in the phenomena. An increase in the frequency was noticed after the second pregnancy. Colored and Latin women showed a preponderance in frequency over the Nordics. It is significant that the defect was not a concentric contraction but in all cases studied was a bitemporal defect. This would apparently rule out the theory that toxicity has to do in producing the defect in the visual fields. Age of the patient evidently had no influence on the course of the phenomena.

Only one death occurred in this series of cases which were examined and it was impossible to obtain an autopsy of the head.

The Etiologic Factors in the Formation of Cholesteatoma. Kenneth M. Day, M.D., Pittsburgh. Annals of Otology, Rhinology and Laryngology, September, 1934.

Fifty consecutive cases are reported with extensive charts and a bibliography. It is a moot question what part moisture plays, but the author believes that this is the factor of greatest importance in the growth and development of cholesteatoma.

The average patient considers the discomfort from the presence of cholesteatoma of minor importance and does not agree readily to the introduction of major surgery to effect a cure. Therefore he must be treated conservatively, being continually watched for signs or symptoms of labryinthine or intracranial extension. The routine conservative treatment of this condition is by the use of some solution free of water. The conservative treatment as outlined is an effort to assist nature's attempts at epidermatization. The growth of epidermis is inhibited by moisture and the waste products interfere with drainage. Instrumentation and lavage maintain a free opening for the escape and drainage of waste products and the absence of moisture promotes the growth of epidermis. Many times the treatment is rendered futile by the preliminary use of hydrogen peroxide or some other similar agent.

If the signs and symptoms are confined to the middle ear, then conservative treatment should bring satisfactory results, otherwise surgery should be resorted to and the affected area thoroughly exenerated. In order to have a cure the epidermis must entirely replace the mucosa in the affected cavities. During the course of this there is a continuous desquamation. Other things besides moisture which may cause desquamation are inflammatory reaction to infection, chemical irritation from the fluids, the biologic reaction of two foreign types of epithelium coming together and mechanical pressure from the mass of cholesteatoma.

The dry cholesteatoma resulting after complete epidermatization may continue to be present in a quiescent stage, giving no signs or symptoms, for years until due to the introduction of water while swimming or bathing it becomes active. Because of the increased amount of tubal secretion in young children conservative treatment rarely produces the end result which is so much desired, i. e., a dry ear. It is universally agreed that a chronic otitic suppuration complicated with cholesteatoma is an indication for radical surgery. Prompt recognition of the condition combined with early and suitable conservative treatment will many times produce a dry ear and relief of symptoms without surgery. It is an important point that even after the dry ear is obtained that the patient report at regular intervals for examination.

In the fifty consecutive cases reported, thirty-seven were treated conservatively with a resulting thirty-one dry ears (no ear was considered cured until it had remained dry at least six months and the washings from the attic returned clear). Six cases, three in young children, were failures due, the author believes, to the presence of a wet, secreting tube.

Nasal Flora and Reaction of the Nasal Mucus. A. R. Tweedie, Nottingham. The Journal of Laryngology and Otology, September, 1934.

Tweedie submits a preliminary report on a colorimetric research of the nasal flora and reaction of the nasal mucus, based on the results found in two hundred cases. For the past fifteen years he has been doing research in this field but it was only about two years ago that his present method was elaborated for the ordinary routine examination. Great care is necessary to be sure that the material used is absolutely neutral in reaction. The author states that there may be fallacies in his technique but no more than are made daily in determining the reaction of urine. He summarizes his results as follows:

1. The normal nose has a reaction varying from

about pH 6.8 to 7.4 and, in the majority of cases, has a non-culturable bacterial content.

2. Cases of acute rhinitis up to three days old, vary in reaction from neutral to alkaline, but show no culturable content.

3. Cases of acute rhinitis, after this period, have an alkaline reaction and mostly show a culturable content with, generally, a more pronounced growth on an alkaline than a neutral medium.

4. In cases of recovered acute rhinitis, the reaction again becomes neutral and the chances of culturable content begin to diminish.

5. In cases of chronic rhinitis, without other general symptoms, the reaction is usually neutral and the mucus more often sterile than not.

6. In cases of chronic rhinitis, associated with sinusitis and polypi formation, the reaction may be either neutral or alkaline and there is a culturable content in about half the cases, and on a medium with a reaction usually corresponding to that of the mucus.

7. In "clean" cases of post-operative or traumatic rhinitis, the reaction is normal and there is no culturable content.

8. A culturable bacterial content may be restricted to one side of the nose. The organisms found have been haemolytic and non-haemolytic streptococci and, occasionally, staphylococcus aureus.

Conclusions drawn by the author are:

1. The mucus of the normal nose can control pathogenic bacteria.

2. It is not until the reaction of the mucus becomes disturbed that the pathogenic bacteria can obtain a footing.

3. On the other hand, there would appear to be certain noses which can be classed as "carriers".

4. Whatever may be the initial cause of the "common cold" it would appear to induce an abnormal alkaline nasal mucus.

5. I think there is also evidence that, with the maintenance of a healthy nose, inflammatory otitis media should be prevented.

6. In culturing, the content of the nose should be tested on both a neutral and an alkaline medium.

Modern Surgery in Diphtheria. Clarence W. Bailey, M.D., Rocky Mount, N. C. Archives of Otolaryngology, August, 1934.

Five thousand nine hundred and ninety-three cases of diphtheria from the Philadelphia Hospital for Contagious Diseases and the Park View Hospital, Rocky Mount, N. C., are reviewed in this article. The author states that in his experience he has never seen a death result from diphtheria in a person who has had his tonsils and adenoids removed and who had been immunized and shown a negative Schick test. Ruling out those who were practically moribund on admission the mortality of the Philadelphia group was 5.53%.

The treatment of diphtheria is divided into three stages by the author, viz.: (a) Combating the acute intoxication; (b) relieving, in about one-sixth of the cases, the mechanical obstruction to the respiratory tract, whether it is pharyngeal, laryngeal, tracheal or bronchial; (c) relieving the patient of infection and from isolation after recovery from the acute disease. The last two stages are discussed in this article. The armamentarium which the author considers adequate is listed. An assistant and nurses who have had special training in dealing with this disease are necessary.

The mortality was 100% in patients with an obstruction of the lower part of the pharynx which necessitated a tracheotomy. Toxemia and myocarditis are given as the cause of death. Removal of the membrane from the larynx and trachea does not leave a bleeding surface as it does in the tonsilar region. A bronchoscope is not used here but a laryngoscope with an aspirating tube. If necessary the procedure is repeated several times. If sufficient airway cannot be maintained in this manner then after thoroughly cleansing the larynx and trachea, an intubation is done. If the tube should be inserted and the membrane pushed downward blocking the tube during a spasm of coughing, emergency treatment will probably be required. Coughing up the tube, traumatization of the laryngeal mucosa, cicatricial stenosis and tubal ulceration and secondary infections are some of the other untoward sequelae mentioned.

The author prefers the indirect method of intubation because to him it is much quicker and simpler. He leaves a banjo wire fastened through the hole of the tube with the ends sticking up to the roof of the mouth so that the tube cannot be expelled with the tongue. The child's arms are splinted so that he cannot remove the tube with his hands. Five days is the average time the tube is left in situ. Diphtheritic bronchopneumonia (diphtheria of the lower alveoli of the lungs), he has always found fatal, death being due to suffocation. According to the author tracheotomies are indicated in only two conditions: the paryngeal obstruction caused by excessive cervical edema and "chronic tube cases". Another possible indication for a tracheotomy conceded is that of a patient who is far out in the country deprived of trained nurses.

Post diphtheritic lung abscesses were observed in only two patients of the entire series. Management of chronic tube cases and diphtheria carriers is discussed. The article closes with a plea for immunization.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D.
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A New Treatment for Delayed Union or Non-union in Fractures. Ralph M. Carter, Jr. Bone & Joint Surg., Vol. XVI No. 4, 1934.

The treatment consists essentially of boring holes, obliquely, through the fragment ends so that bone regeneration will be stimulated. The method is along the lines first recommended by Beck and Kiel and Bohler of Austria. He uses a hand drill holder and a wire drill consisting of a smooth, sharpened wire, rather than a spiral drill which has a tendency to draw the bone pulp out of the wound. He also uses a holder for stabilizing the drill. He prefers the hand drill to the motor driven drill because of safety.

Under nitrous-oxide-oxygen anesthesia, using strict aseptic technique, the point of the drill is slipped through the hole in the small stabilizing instrument, and is then pushed through the skin at a point either distal or proximal to the fracture line, until it comes into contact with the bone. By pressing the stabilizer firmly against the skin, the assistant steadies the point of the drill, which is now made to penetrate the bone in a diagonal direction, so as to cross the fracture line and to enter the other fragment. The drill is

then withdrawn to the periphery of the bone, but not outside the skin, and the drilling is repeated in a slightly different direction. Six to eight or more holes may be drilled in a small bone and ten to twelve holes in a larger bone. The drill is withdrawn and the same procedure is repeated through a skin puncture on the opposite side of the fracture line.

An unpadded plaster cast is afterward applied. X-ray made four to six weeks later will usually show definite bone callus.

Splints Combining Skeletal Traction and Countertraction. George W. Hawley, Jr. Bone & Joint Surg., Vol. XVI, No. 4, October, 1934.

Dr. Hawley describes a number of splints which promote convenience and efficiency in applying Kirschner wire traction in fractures of the tibia, fibula and the forearm. They cannot be well described in this abstract but it is recommended that anyone using Kirschner wire traction read this article.

His apparatus is similar in application to that proposed by Dr. Roger Anderson, but has some advantages over the latter.

Giant Cell Tumor of the Spine. Henry Milch. Am. J. Cancer, XXI, 363, June, 1934.

The author has reviewed the literature on giant-cell tumor of the spine and finds that the condition is comparatively rare.

He reports a case of a sixteen-year old boy who had had symptoms for about six months referable to his cervical spine and consisting chiefly of pain and limitation of motion. On examination, a tumor was felt in the region of the third cervical spine, roentgenographic examination of which suggested a giant-cell tumor. At operation the spinous process of the vertebra and the posterior portions of the adjacent laminae were removed. Microscopic examination confirmed the diagnosis of giant-cell tumor. Following operation, the patient was treated over this area with radium packs, receiving a total dose of 22,250 milligram hours. Roentgenographic examination a year later showed no evidence of disease and an almost complete regeneration of the neural arch.

The author suggests that such cases be treated by radiation, either alone or combined with surgery.

Osteitis Fibrosa of Recklinghausen, Heterotopic Parathyroid Adenoma, Metastases of a Benign Adenomatous Struma and Adenoma of the Left Adrenal in the same Patient. Hilding Bergstrand. Am. J. Cancer, XXI, 581, July, 1934.

The author reports this case in detail with roentgenograms, photographs, and photomicrographs. The presence of adenomata in three internal secretory glands points to an embryonal disturbance as the basis of them all. Metastases of a thyroid adenoma are rare. In this case they were present in the lungs and in the humerus, and showed the characteristic microscopic picture of struma colloides. The author states that the essence of Recklinghausen's disease of bone appears to be a general osteolysis around the bone corpuscles. The other changes—such as new bone formation, cysts, and giant-cell tumors—are secondary and are not essential to the diagnosis.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic
714 Medical Arts Bldg., Oklahoma City.

Transplantation of Living Grafts of Thyroid and Parathyroid Glands. By Harvey B. Stone, James C. Owings and George O. Gey. Annals of Surgery, October, 1934, Page 613.

The authors have proved to their satisfaction that certain endocrine tissues may be transplanted successfully from one individual to another when dealing with dogs. Factors of success in such transplants include the choice of a proper site for the graft, proper size and form of the graft, and biochemical adaptation of the graft to the host. The axilla and groin are proper sites. The graft should be tiny fragments or tissue cultures. The graft should be grown in culture in a medium containing the blood fluid of the host to adapt it before implantation.

They have submitted ten human beings to grafting treatments, using the method developed by experiments on dogs. Five of these were grafts of thyroid tissue and five were grafts of parathyroid tissue. Of these ten cases, only two are of sufficiently long standing to permit an opinion as to the success of the experiment—both of them being parathyroid tetany cases. In these two cases they believe that they are justified in assuming that the grafts are successful.

They have formulated certain requirements as desirable in the site in which the graft is to be placed. There should be a closely adjacent vascular supply, from which new vessels may develop to support the growing graft, but the tissue itself should not contain a rich capillary network, as does the liver and spleen, because in such a bed the development of hematoma is too apt to choke the graft. The tissue selected should be loose in texture, free from a dense capsule such as parenchymatous organs have, or a firm sheath as is the case with voluntary muscles. These conditions result in pressure on the graft that inhibits its growth. The site selected should be easy of access without difficult or hazardous operative exposure for the implantation, and should, of course, not involve damage to any necessary or important organ. All of these conditions are met by the loose areolar tissues of the axilla and groin, and it is in these localities that practically all of their successful grafts have been made, both in dogs and humans.

They also believe that many previous attempts at cross-grafts of endocrine glands failed because the grafts were too large. Until an organized blood supply can grow into the graft, it must live, if at all, by processes of osmosis and diffusion. Such processes are effective only on cells in intimate contact with the body fluids of the host, hence only a few peripheral layers of cells on the graft. The rest of the more central portions of the graft necrose, and this entails great danger to the whole graft. For this reason they employ tiny fragments of glandular tissue, a millimeter or so in diameter, or better still a growing culture of gland tissue in which the cells are spread out in thin sheets ideally suited to intimate contact with the host fluids.

Another factor in the problem is the adjustment of the graft to the chemistry of its new environment in the host animal. We have all seen grafts of skin from one person to another often look as though they would "take" for a week or ten days, and then begin to disintegrate, and finally in two or three weeks entirely disappear. The authors have had similar experiences in their earlier experiments with

thyroid and parathyroid tissue. The explanation of this, they feel, is that there is a chemical disharmony between the graft and its environment that leads to its death. An effort should be made to secure an adaptation of the graft to the body fluids of the host before it is actually implanted. To obtain this objective the authors developed the following method: It is known that mammalian tissues of various kinds may be grown artificially "in vitro" by the methods of tissue culture. In such cultures a medium is used that must contain nutriment substances, and these are usually provided by using serum and plasma, but experience has shown that it is not necessary to use a serum and plasma of the animal from which the tissue to be grown has been obtained. Indeed, it is not even necessary that these fluids be from an animal of the same species. Considering these facts they decided that it might be possible to adapt the graft to its host by first growing it as a tissue culture in a medium containing the body fluids of the future host. This they have done in all the cases in which they have secured successful grafts. They are not certain as to whether or not such a preliminary adaptation is absolutely necessary, but they believe that it adds greatly to the chances of successful grafting.

The two reported successful human parathyroid grafts are quite convincing. These two cases have been grafted fifteen months and ten months, respectively. Their clinical recovery from all symptoms of tetany and the return of their blood chemistry to normal are evidence of success. Realizing that parathyroid tetany cases sometimes tend to spontaneous recovery, it would seem that the grafts in these two cases have been successful because of the long period of stationary or progressive tetany before grafting was done. However, from the human experiments examined they are not yet justified in drawing any general conclusions.

—LeRoy D. Long, M.D.

Metallic Poisoning Simulating the Acute Surgical Abdomen. By Robert C. Fisher, American Journal of Surgery, October, 1934, Page 175.

Dr. Fisher, a medical examiner in New York, reports in detail four cases of heavy metal poisoning which clinically appeared at first to require immediate operation for the relief of an acute abdominal condition. The four cases reported were due to lead, mercury, arsenic and to "Paris green". (Paris green is a compound of copper and arsenic.) On further study in the hospital they presented a puzzling picture. Fortunately each patient was treated conservatively. The true nature of these cases was not revealed until an autopsy had been done. The striking symptoms in each case on admission were severe abdominal pain and vomiting. For this reason the case was sent to the surgical service. Routine examination by the ward physician resulted in a number of "provisional diagnoses," including acute appendicitis, ruptured ulcer, acute pancreatitis, acute cholecystitis, kidney stones, intestinal obstruction, empyema of the gall bladder, coronary thrombosis and acute gastro-enteritis. On further study all these cases showed a soft abdomen which was not distended and in which no mass could be felt. An important feature is that none of the patients had fever. In one case the vomiting was persistent and frequent, and a watery diarrhea was soon developed. The stools looked very much like the material vomited, and contained pale greenish blue flakes. In other cases the stools were abnormal in that they showed either fresh blood or a strongly positive guaiac test (in the absence of hemorrhoids and other rectal lesions). The vomitus in two cases showed a positive guaiac reaction and microscopic red blood cells, one patient vomited coffee ground material soon before she died. A questionable jaundice of the skin and sclerae were described in one case, but the icteric index was found to be within normal limit. Another case showed only a slight jaundice clinically, with an icteric index of 43. Severe kidney damage was evident from a study of the urine and blood chemistry in three cases. The other patient lived only fourteen hours after the onset and did not void during this time. Although none of these patients looked on inspection like a chronic nephritic with uremia, the urine showed white blood cells, red blood cells, casts and albumen and was scant in amount. The N.P.N. and urea in the blood were elevated far beyond normal limits.

Lead is probably the most important of the metallic poisons. Acute lead poisoning is rare. The type usually seen is similar to the case described here, a typical case of chronic lead poisoning. This type of poisoning is important both in industry and outside of it. So-called epidemics of lead poisoning have occurred from drinking water contaminated by the lead in the pipes through which the water flows. Other cases result from drinking beer brewed in lead lined vats or wine contaminated by lead. Lead may get into food when the food is cooked in lead vessels. Vegetables and fruits may absorb enough lead to cause harm when eaten if they are sprayed by an insecticide containing lead arsenate. On being absorbed lead is probably transported in the blood stream in the form of colloidal lead phosphate, and deposited in the tissues, especially the bone as tertiary lead phosphate. As long as the lead remains stored in the bones, no symptoms of poisoning develop. It has been shown that as long as there is a positive calcium balance and a normal P.H. of the blood, lead remains in the bones. However, when a condition of alkalosis or acidosis obtains, it is thought that lead is dissolved out of the bones and re-enters the circulation coming into direct relation with vital tissues such as liver, kidney, and bone marrow. This may explain why a sudden appearance of symptoms of lead poisoning may occur in an individual who has not been exposed to lead absorption for some time.

We are to deduce from this report that when a patient presents a picture of an acute abdomen as evidenced by severe abdominal pain and frequent vomiting, but physical examination reveals no rigidity, distention or mass, and there is no fever, intensive study of the vomitus, stool, urine, and blood chemistry is indicated. If there is heavy metal poisoning there will usually be distinct evidence of renal impairment within about twenty-four hours after the onset of abdominal pain.

This report is of particular interest to me because of personal experiences while caring for the employees of a local storage battery manufacturer. A number of the men working in this plant have chronic lead poisoning and several of them have had repeated attacks of acute colic. Each time an acute colic occurs there is always raised a question of whether or not the subject has an acute surgical abdomen. On the other hand, one of these known cases of chronic lead poisoning did have an acute mechanical intestinal obstruction which was not associated in any way with his lead poisoning.

—LeRoy D. Long, M.D.

BOOKS RECEIVED

Synopsis of Genitourinary Diseases: By Austin I. Dodson, M.D., F.A.C.S., Richmond, Virginia. Professor of Genitourinary Surgery, Medical College of Virginia; Genitourinary Surgeon to the Hospital Division, Medical College of Virginia; Genitourinary Surgeon to Crippled Children's Hospital; Urologist to St. Elizabeth's Hospital; Urologist to St. Luke's Hospital and McGuire Clinic. With 111 Illustrations. Price $3.00. The C. V. Mosby Company, St. Louis, 1934.

Senile Cataract, Methods of Operating: By W. A. Fisher, M.D., F.A.C.S., Chicago. Professor of Ophthalmology, Chicago Eye, Ear, Nose and Throat College; formerly Professor of Clinical Ophthalmology, University of Illinois; formerly Surgeon, Illinois Charitable Eye and Ear Infirmary; formerly President, Chicago Ophthalmological Society; member, Inlinois State Medical Society; Chicago Medical Society; Fellow, American Medical Association; Fellow, American College Surgeons; Fellow of the Academy of Ophthalmology and Otolaryngology. With the collaboration of Professor E. Fuchs, Vienna, Austria; Professor I. Barraquer, Barcelona, Spain; Dr. H. T. Holland, Shikarpur, Sind, India; Dr. John Westley Wright, Columbus, Ohio; Dr. A. Van Lint, Brussels, Belgium; Dr. O. B. Nugent, Chicago, Ill. 267 pages, 183 illustrations, 112 of which are colored. Chicago Eye, Ear, Nose and Throat College, Publishers, Chicago.

Institutional Care of Mental Patients in the United States: By John Maurice Grimes, M.D. Four years a staff member of The Council on Medical Education and Hospitals of the American Medical Association. Price $3.00. Published and Distributed by the Author, 1816 North Clark Street, Chicago.

Applied Anatomy, the Construction of the Human Body Considered in Relation to Its Functions, Diseases and Injuries: By Gwilym G. Davis, M.D., late Professor of Orthopedic Surgery and Associate Professor of Applied Anatomy in the University of Pennsylvania. NINTH EDITION, Reset, Reillustrated and Completely Revised by George P. Muller, M.D., Professor of Clinical Surgery, Graduate School of Medicine, University of Pennsylvania; Surgeon to the Misericordia and Lankenau Hospitals; Assisted by Bernard J. Alpers, M.D., Assistant Professor of Necrology, Graduate School of Medicine; Neurologist to the Philadelphia General and Pennsylvania Hospitals; and Robert A. Kimbrough, Jr., M. D., Associate in Obstetrics and Gynecology, University of Pennsylvania; Assistant Gynecologist, University Hospital; Obstetrician, Pennsylvania Hospital; and Stirling W. Moorhead, M.D., Assistant Professor of Urology, University of Pennsylvania; Urologist to the Methodist Episcopal Hospital; and I. S. Ravdin, M.D., Professor of Surgical Research, University of Pennsylvania; Surgeon to the University Hospital; and S. Dana Weeder, M.D., Surgeon to the Germantown Hospital; Assistant Surgeon to the Chestnut Hill Hospital. With Six Hundred and Seventy-four Illustrations Mostly From Original Dissections and Many in Color, by Erwin F. Faber. J. B. Lippincott Company, Philadelphia.

A Manual of the Practice of Medicine: By A. A. Stevens, A.M., M.D., formerly Professor of Applied Therapeutics in the University of Pennsylvania; Honorary Consulting Physician to the Philadelphia General Hospital; Consulting Physician to St. Agnes Hospital, Philadelphia. Thirteenth Edition, Revised. 685 pages. Philadelphia and London: W. B. Saunders Company, 1934. Cloth, $3.50 net.

LILLY RESEARCH LABORATORIES FORMALLY OPENED

More than a thousand investigators and research workers were present at the formal opening of the new Lilly Research Laboratories at Indianapolis on October 11. The gathering of distinguished visitors representing many noted bodies and famous institutions in this and foreign countries as well, assembled in a mammouth tent erected for the occasion adjacent to the Lilly Laboratories.

At the formal opening exercises, in the afternoon, Eli Lilly, head of the Lilly organization, presided as chairman. Mr. J. K. Lilly, chairman of the board of directors, was introduced and responded briefly on "Research in Manufacturing Pharmacy" from the time of his entrance in the organization in 1876 up to the present, when there is so much evidence of the fact that medical science, in becoming an integral part of our social structure, has, in turn, become in a broad measure dependent upon industrial development.

Following Mr. Lilly's remarks, Dr. Irving Langmuir, director of reasearch for the General Electric Company, discussed "The Unpredictable Results of Research." The speaker stressed the point that fundamental research should be pursued by industrial corporations regardless of any immediate possible commercial returns therefrom. He gave an account of his purely theoretical gas absorption studies which ultimately led to the development by the General Electric Company of their present highly efficient electric light bulb.

The chairman then introduced Sir Frederick Banting, who talked on "The Early History of Insulin." He gave an account of the early experiments conducted by Dr. Best and himself which first demonstrated the existence of Insulin, and expressed his great appreciation of the co-operation which he and his associates had received from the staff of the Lilly Research Laboratories in the development of a practical, large-scale procedure for the production of Insulin.

Sir Henry Dale, director of the National Institute for Medical Research, London, and secretary of the Royal Society, was the last speaker on the afternoon program. He chose as his topic "Chemical Ideas in Medicine and Biology." Sir Henry spoke of the immediate objectives of research in such laboratories as those of Eli Lilly and Company, and of their natural and proper differences from those of the laboratories supported by academic or public endowment. It was his thought, however, that the differences in result for the progress of medical science are often more formal than real. He expressed the hope that the growth of co-operation between those working in these different spheres might yet bring to many the rather rare privilege that had come to him of migrating from one to the other and back again, and thus of knowing at first hand the best that each can offer.

According to Sir Henry, the change that has taken place in the scope of pharmacy has a revolutionary aspect. He cited the fact that pharmacy not very many years ago was predominantly concerned with the traditional drugs that had come into use through empirical observation. Even though with the years

had come new additions from time to time, the therapeutic outlook and attitude had changed but little for centuries. He pointed out that a beginning had been made by pharmacology toward rationalizing the use of those drugs in common use which had an action sufficiently definite to be susceptible to experimental analysis. The attitude of the physician and that of the investigator, in the opinion of the speaker, was, however, one of skeptical pessimism.

He did not suggest that palliative treatment no longer existed in medical practice or that its complete elimination was expected or even desirable. He cited the fact that alleviation of symptoms not only brings the richest reward of gratitude but said that it might be the most urgent medical duty.

Sir Henry referred to the fact that he was speaking in the presence of Sir Frederick Banting and in the place where the large-scale production of Insulin had its earliest organization, and that he felt he need not remind his audience of the revolutionary change which has taken place in the treatment of a disease that only a few short years ago was the despair of the physician.

"The transformation of the whole aspect of one disease by the discovery of Insulin has attracted a more general attention," said the speaker, "than almost any other advance in medical science within our time." He was of the opinion that this discovery might be considered indicative of the wider progressive change in therapeutic method, based upon new knowledge of the causes of disease and aiming at the removal of those causes.

The speaker expressed the thought that looking at the change as a whole, one might distinguish two main contributory factors.

The first of those was the recognition of infections as due to the invasion of the body by living micro-organisms. It is a commonplace, he said, that preventive medicine was born of this discovery, that it gave a new direction to the therapeutics of infective diseases, in the search for remedies specifically killing or limiting the growth of the infecting micro-organisms or specifically neutralizing the poisons which they produce in the infected body. A few of the older remedies, indeed, according to the speaker, owed their value to an unconscious application of such specific actions for the control of infective organisms which modern research has since identified: cinchona, ipecacuanha, mercury, and the iodides. Contrast with this, he said, the resources of modern therapeutics, with its range of antitoxins and bacterial products, and its growing list of new synthetic compounds discovered as the result of deliberate and organized search for substances which shall be harmless to the infected patient in doses which kill or prevent the multiplication of the infecting organism. Ehrlich, said the speaker, termed this new type of therapeutics "chemotherapy." A new and exactly chemical basis for these mysterious phenomena of immunity is even now being built, according to Sir Henry, the synthetic production of artificial specific remedies for infection which has, in the course of some twenty-five years, given us arsphenamine and other organic arsenical compounds such as tryparsamide; various derivatives of antimony; complex organic substances related to the dyestuffs on the one hand or to natural alkaloids on the other, and specifically effective against the trypanosomes of African sleeping sickness, or against the parasite of malaria, still the most deadly enemy to human life and health, if we view the world's peoples as a whole. We may properly class these synthetic substances, according to the speaker, with the antitoxins and other antibacterial substances, as artificial and natural agents for the removal from the body of harmful invaders from without.

A second principal factor in this change in therapeutic outlook may be found, said the speaker, in the recognition of diseases due to the lack of substances normally present in the body. Modern therapeutics, he said, can show no triumphs more brilliant than those which have followed the discovery of methods of preparing a number of glandular products in a state of sufficient purity to enable them, by artificial administration, to correct an abnormal deficiency. In the speaker's opinion, there can be no doubt that preparations from these glands are destined to acquire an increasing range of success of application, as the methods for purifying and stabilizing their subtle principles are progressively improved, and as clinical science, thus able to apply them, recognizes more clearly the conditions due to partial defects of their natural supply.

It is Sir Henry's thought that there is the second class of specifically acting substances, necessary like the hormones for healthy function and growth, but obtained by the body mainly from the food, and known to all the world as "vitamins." He related the story of Jacques Cartier and his expedition, when they landed in Canada four hundred years ago. Being attacked by scurvy, they learned from the native Indians to cure the condition with an infusion of the fresh sprouting tips of a species of fir tree. Nobody can guess how long the Canadian Indians had possessed this life-saving knowledge, just as those of the South American continent knew of the value of cinchona bark in fevers and of ipecacuanha in dysentery. This method of treating scurvy, said the speaker, passed out of the white man's memory for yet another two centuries. Sir Henry told how the Royal Society of London, when giving to James Cook the Copley Medal, based the award on his improvement of methods for preventing disease among sailors.

It would be possible, he said, to regard this remarkable change in therapeutic outlook and method simply as one phase in the general scientific development which has transformed a whole range of human activities in a generation. He felt that if we look for a particular rather than a general cause, we shall find it in the rapidity with which chemical knowledge and ideas have, in this same period, permeated the whole of medical and biological science. Biochemistry was referred to as having taken rank among the great divisions of science, and its influence, he thought, penetrated the whole range of the medical and biological sciences, while organic chemistry itself was showing a welcome tendency to recover its original objective, in studying the products and processes of living organisms.

The newer developments have but little relation to the art of the individual pharmacists whom our fathers knew, said the speaker, but we must resign ourselves, as in other spheres of human activity, to the loss of the individual art in exchange for scientifically organized production. In fact, he continued, in order to meet these novel, various, and expanding demands of modern therapeutics, pharmacy has to become one of the most highly organized departments of scientific manufacture, covering an extraordinary range of expert knowledge and equipment. It now needs stables and pasturage, incubation rooms for large-scale culture of a wide variety of bacteria, and sterile rooms for manuipulation of the products; chemical plant adapted to the difficult synthesis of complex and delicate compounds, or to the chemical and physical separation and purification of unstable natural principles, from animal organs only obtainable in adequate quantity and freshness by the co-

operation of highly organized abbattoirs. He cited, in addition, a much more fundamental requirement, calling particular attention to the need for research undertaken in the spirit of free inquiry, often with no immediate practical aim or any probable result other than the increase of fundamental knowledge.

The speaker paid tribute to Eli Lilly and Company for their high rank among industrial organizations which have supported scientific research for its own sake and because they have known how to value the spirit which is engendered when scientific workers are given a wide freedom.

The afternoon speaking program was followed by an inspection of the new laboratories, the party being divided into small groups in the charge of guides.

In the evening a banquet was tendered the out-of-town guests. Mr. J. K. Lilly served as toastmaster and responses were made by Sir Henry Dale; Dr. Elliott P. Joslin, of Boston; Dr. George R. Minot, of Boston; Dr. Frank D. Lillie, of Chicago; Dr. Geo. H. Whipple, of Rochester, N. Y.; Dr. Carl Voegtlin, of Washington, D. C.; and Dr. G. H. A Clowes, head of the Lilly Research Laboratories.

CHORIONEPHITELIOMA: EARLY DIAGNOSIS BY THE QUANTITATIVE DETERMINATION OF ANTERIOR PITUITARY-LIKE PRINCIPLE FROM THE URINE OF PREGNANCY

Michael L. Leventhal and William Saphir, Chicago (Journal A. M. A., Sept. 1, 1934), present a case illustrating the importance of determining quantitatively the amount of anterior pituitary-like substance in the urine following the expulsion of a hydatidiform mole. Although historically the tumor was not the most malignant type of chorionepithelioma (Choriocarcinoma), still the high gonadotropic concentration as a biologic indicator points to the potentiality of profound malignant change. This is important because the histologic picture is not always a true prognostic index in chorionepithelioma. This fact was well demonstrated in the unusual case recently reported by Lackner and Leventhal, in which, microscopically, a typical choriocarcinoma was found, and, in spite of both pulmonary and vaginal metastases, cure (the patient is now well after eight years) followed hysterectomy and high voltage roentgen irradiation. It will be interesting, in the future, to note whether the amount of anterior pituitary-like principle bears any relation to the histologic classification of the choriomas (as set forth by Ewing). The performance of a radical operation entirely on the basis of a laboratory observation of 333,000 mouse units of gonadotropic substance per liter of urine and in the absence of any palpable or visible pathologic change was justified by the discovery of a potentially malignant tumor in an early stage of its proliferation. In the absence of clinical manifestations, an amount of gonadotropic substance in the urine in excess of 20,000 mouse units per liter indicates an early chorionepithelioma. The disappearance of a positive Aschheim-Zondek test following operation is a true indication of the absence of live chorionic villi (recurrence or metatasis). Therefore the use of postoperative radiation therapy is unnecessary in the presence of a vegetable test. This would obviate the deleterious effects of irradiation in cases in which it is not needed.

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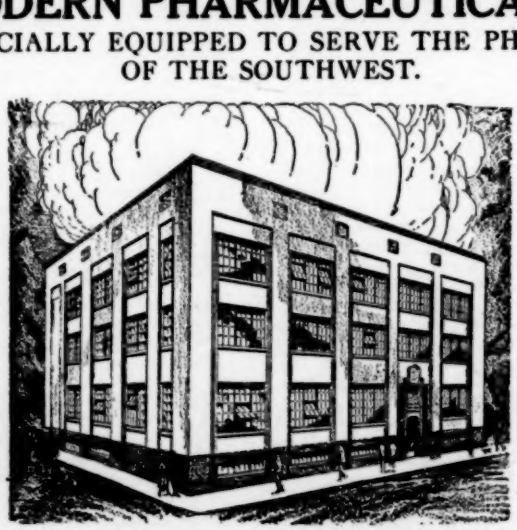

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